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# STUDIES

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No. 44

February, 1988

## 1990 HEALTH OBJECTIVES FOR THE NATION:

### THE NORTH CAROLINA COURSE

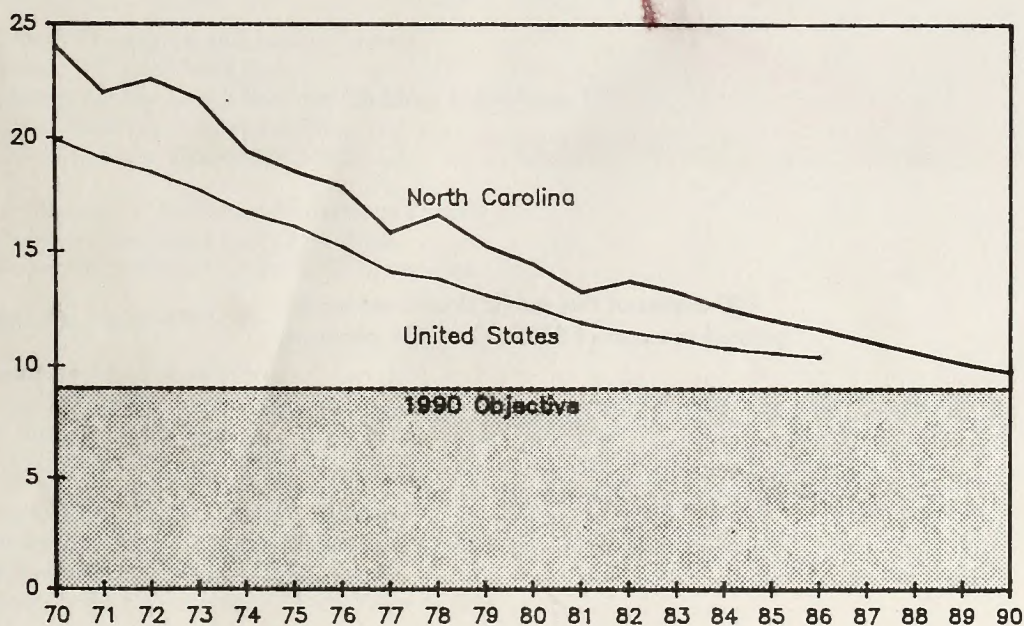
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Kathryn B. Surles and Kathryn P. Blue



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February 1988

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## HIGHLIGHTS

Of the 30 national objectives addressed in this report, North Carolina has already met these, at least in part:

- ***Virtually all women who give birth should have appropriately attended, safe delivery, provided in ways acceptable to them and their families:*** In 1986, only 0.2 percent of North Carolina mothers were not attended by a physician or midwife with certified nurse midwives accounting for 99.4 percent of the midwife deliveries. No data are available on the latter part of the objective.
- ***At least 95 percent of children attending licensed day care facilities and kindergarten through 12th grade should be fully immunized:*** In 1986, more than 99 percent of North Carolina kindergarten and first grade children were fully immunized. The percentage for grades 2-12 was 98.4 in 1980. No current data are available for children in licensed day care facilities.
- ***The cirrhosis mortality rate should be reduced to 12 per 100,000 per year:*** The North Carolina rate has been below 12.0 since 1981 and is projected to decline to about 9.4 in 1990.
- ***The death rate from homicide among Black males ages 15-24 should be reduced to below 60 per 100,000:*** The North Carolina rate has been below 40 for at least the last 8 years; however, the rate increased in each year 1984-1986 and is projected to rise to about 43.0 in 1990.
- ***The rate of suicide among people 15 to 24 should be below 11 per 100,000:*** The North Carolina rate dropped to 10.5 in 1986 and is projected to decline to about 9.2 in 1990.

Based on 1982-1986 trends, statistical projections indicate that it will be possible for North Carolina to meet these objectives by 1990:

- ***The neonatal death rate should be reduced to no more than 6.5 deaths per 1,000 live births:*** The North Carolina rate was 7.7 in 1986 and is projected to decline to 6.2 in 1990.
- ***Reported primary and secondary syphilis incidence should be reduced to a rate of seven cases per 100,000 population per year, with a reduction in congenital syphilis to 1.5 cases per 100,000 children under one year of age:*** The North Carolina syphilis rate was 8.9 in 1986 and is projected to decline to about 6.4 in 1990. No cases of congenital syphilis were reported in 1986, and a rate of less than 1.5 is projected for 1990.
- ***Deaths from other (nonmotor-vehicle) accidents indirectly attributable to alcohol use should be reduced to five per 100,000 population per year:*** The North Carolina rate was 5.3 in 1986 and is projected to reach about 4.8 in 1990.

Projections could not be made for two objectives: immunization of two-year-olds and newborn screening for metabolic disorders. For the remaining 20 objectives addressed here, recent trends indicate that it will not be possible for North Carolina to achieve the targeted values.

Nationally, it appears likely that eleven of the 30 objectives will not be met, and achievement of at least seven others appears questionable, or reliable measurement data are not available. Objectives which appear likely to be met nationally but not in North Carolina are: reduction of the gonorrhea incidence rate to 280 and reduction of the motor vehicle death rate to 18 in total and to 5.5 for children under 15. Rates are per 100,000 population.

Perhaps the most important result of this review is the identification of objectives for which North Carolina projections are upward rather than downward toward the target. Though some of the projected increases are slight, they mean that virtually no progress was made during the 1982-1986 period. Projecting to 1990, increases are expected in the following areas:

- The fertility rate for girls 14 or younger, projected to rise from 1.6 to 1.8, and for girls age 17, projected to rise from 55.2 to 57.0.
- The percentage of abortions performed in the second trimester, projected to rise from 12.3 to 12.4.
- The percentage of low-weight births among whites, projected to rise from 6.1 to 6.2.
- The motor vehicle death rate in total, projected to rise 18% from 26.9 to 31.7, and among children under 15, projected to rise 9% from 10.3 to 11.2.
- The drug-related death rate, projected to rise from 2.6 to 2.7.
- The homicide rate for Black males 15-24, projected to rise 9% from 39.6 to 43.0.
- The number of reported abused and neglected children (ages 0-17), projected to rise 11.5% in three years from 34,959 (FY 87) to 38,973 (FY 90).

The rising number of child abuse cases undoubtedly reflects surveillance and reporting artifacts to some extent; nevertheless, there is cause for concern. With the population ages 0-17 declining, the child abuse case rate (reported or confirmed) has risen even faster than the number of cases. Also noteworthy is the declining percentage of "confirmed" cases among those reported. This percentage is projected to decline from 35.4 in FY 87 to about 31.4 in FY 90 following a consistent 40-43 percent during all of fiscal years 1977-1984. Reasons for the decline are unknown.

The final conclusions to be drawn from this assessment must await data year 1990. Meanwhile, it is hoped that this review will be helpful to those responsible for setting North Carolina's health agenda over the next several years.



## INTRODUCTION

Following the 1979 release of *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention* (1), a total of 226 national health objectives were published in the 1980 report, *Promoting Health, Preventing Disease: Objectives for the Nation* (2). Those objectives set a course toward the target year 1990 in addressing measures to improve health status and reduce health risks across 15 areas of mortality, morbidity, preventive interventions, and health-related behaviors.

Issued in November 1986, the Public Health Service report, *The 1990 Health Objectives for the Nation: A Midcourse Review* (3), provides a status report on the national objectives, a commentary on that status, and an assessment of what will be needed to reach the 1990 target successfully.

The present report, *1990 Health Objectives for the Nation: The North Carolina Course*, is in response to 30 quantifiable national objectives for which comparable and reliable North Carolina data are available. It is meant to inform health planners, policy makers, and the health community at large of state and national trends and the statistical prospects for meeting each of the 30 objectives, based on trends of the recent past. The additional 196 national objectives not included here are addressed from a nationwide perspective in the report cited above (3).

## TECHNICAL NOTES

### Resident Data

All North Carolina data shown in this report are for residents of the state except data obtained from the Office of the Chief Medical Examiner and the Newborn Screening Program, which reflect events occurring in North Carolina. The denominators for population-based rates are midyear population counts obtained from the Office of State Budget and Management.

### Crude Rates

Where applicable, the national objectives were developed on the basis of crude (unadjusted) rates rather than rates adjusted for age, race or other factors.

### International Classification of Diseases (ICD)

The causes of death examined in this report are defined in terms of codes from the Eighth and Ninth revisions of the *International Classification of Diseases* (4,5). The Ninth Revision was implemented in 1979.

While each death certificate may have as many as 25 causes, conditions, or contributing factors coded and keyed, only the underlying cause of death was used in developing the national objectives.

### Projections to 1990

The North Carolina projections depicted in this report are based on fitting a linear regression model to the logarithm of the observed rates, percentages or numbers. Logarithms are used because they follow a constant proportional change rather than a constant arithmetical change. These log-linear projections assume that the lower a value has become, the more difficult it will be to achieve further reductions. However, these projections are only extrapolations of the observed trends and could be substantially inaccurate if 1987-1990 trends depart very much from those of the recent past. The projections are based on data for 1982-1986, the latest five-year period for which data are available. It was felt that 1987-1990 trends would correspond more closely to those of the last five years than to those of the longer-term past. Again, the projections are only "statistical estimates" of future values, and they may prove to be grossly inaccurate.





# **I. PREVENTIVE HEALTH SERVICES**

## **FAMILY PLANNING**

## **FERTILITY RATE FOR GIRLS 14 YEARS OF AGE AND UNDER**

### **Objective**

By 1990, there should be almost no unintended births to girls 14 years of age and under. (Note: The assumption is made that all births to this age group are unintended.)

### **Explanatory Notes**

For this report, the fertility rate is calculated as the number of resident live births to girls 14 or younger per 1,000 female population ages 10-14.

### **Findings**

A total of 358 births occurred to North Carolinians 14 or younger in 1986. The N.C. rate has consistently run above the nation's and projections to 1990 indicate that the state rate may increase. The nation also is not expected to meet this objective (3).

### **Data Sources**

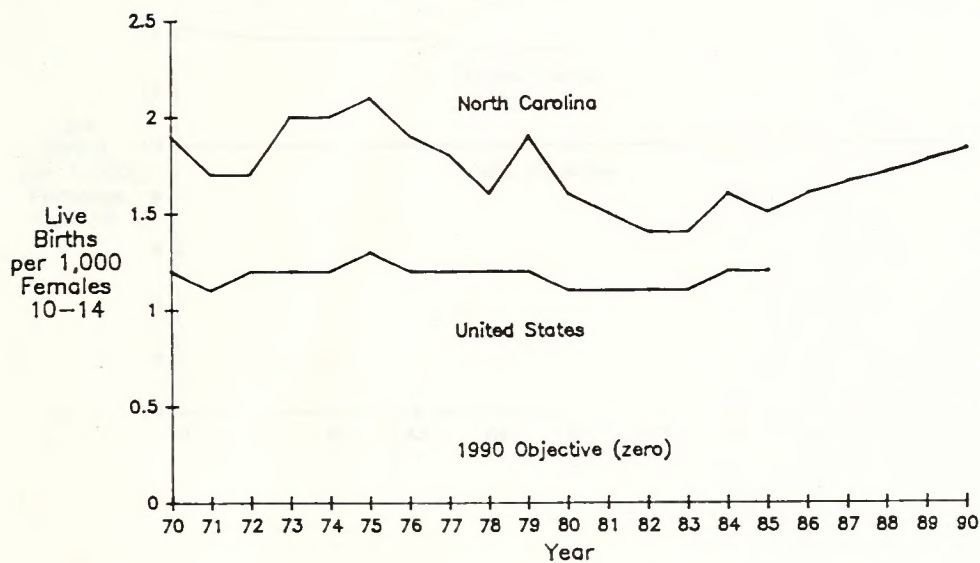
North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics



**FERTILITY RATES FOR GIRLS 14 YEARS OLD OR YOUNGER  
NORTH CAROLINA AND UNITED STATES  
1970-1986**

Year	North Carolina	United States
1970	1.9	1.2
1971	1.7	1.1
1972	1.7	1.2
1973	2.0	1.2
1974	2.0	1.2
1975	2.1	1.3
1976	1.9	1.2
1977	1.8	1.2
1978	1.6	1.2
1979	1.9	1.2
1980	1.6	1.1
1981	1.5	1.1
1982	1.4	1.1
1983	1.4	1.1
1984	1.6	1.2
1985	1.5	1.2
1986	1.6	NA

**FERTILITY RATES FOR GIRLS 14 YEARS OLD OR YOUNGER  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990**



## FERTILITY RATE FOR GIRLS 15 YEARS OF AGE

### Objective

By 1990, the fertility rate for girls 15 years of age should be reduced to 10 per 1,000.

### Explanatory Notes

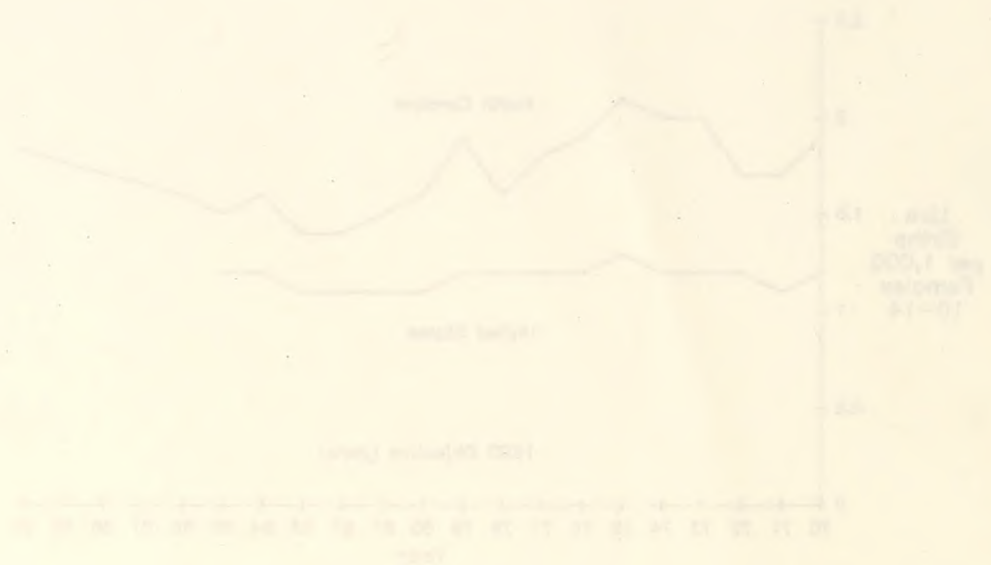
The fertility rate is calculated as the number of resident live births to girls 15 years of age per 1,000 female population 15 years of age. N.C. population bases for single years of age are not available prior to 1980.

### Findings

The North Carolina rate has consistently run above the nation's and rose in each of the last two years. Projections indicate a declining rate to 15.8 in 1990. The nation also is not expected to meet this objective (3).

### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics

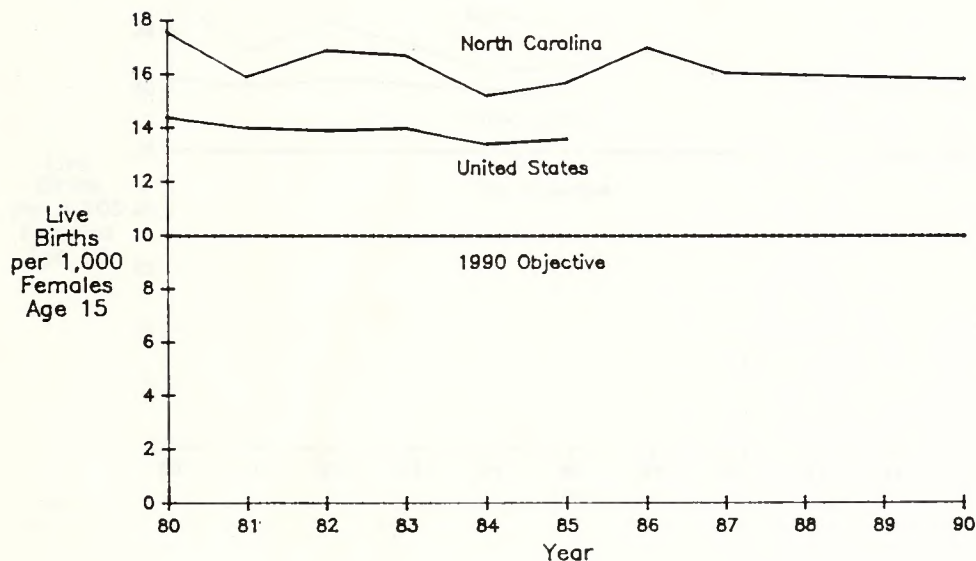




# **FERTILITY RATES FOR GIRLS 15 YEARS OF AGE NORTH CAROLINA AND UNITED STATES 1980-1986**

Year	North Carolina	United States
1980	17.6	14.4
1981	15.9	14.0
1982	16.9	13.9
1983	16.7	14.0
1984	15.2	13.4
1985	15.7	13.6
1986	17.0	NA

## **FERTILITY RATES FOR GIRLS 15 YEARS OF AGE NORTH CAROLINA AND UNITED STATES 1980-1986, NORTH CAROLINA PROJECTED TO 1990**



## FERTILITY RATE FOR GIRLS 16 YEARS OF AGE

### Objective

By 1990, the fertility rate for girls 16 years of age should be reduced to 25 per 1,000.

### Explanatory Notes

The fertility rate is calculated as the number of resident live births to girls 16 years of age per 1,000 female population 16 years of age. N.C. population bases for single years of age are not available prior to 1980.

### Findings

The state rate has consistently run above the nation's and rose in each of the last two years. Projections suggest a decline to 30.0 in 1990. The nation also is not expected to meet this objective (3).

### Data Sources

North Carolina: State Center for Health Statistics

United States: National Center for Health Statistics

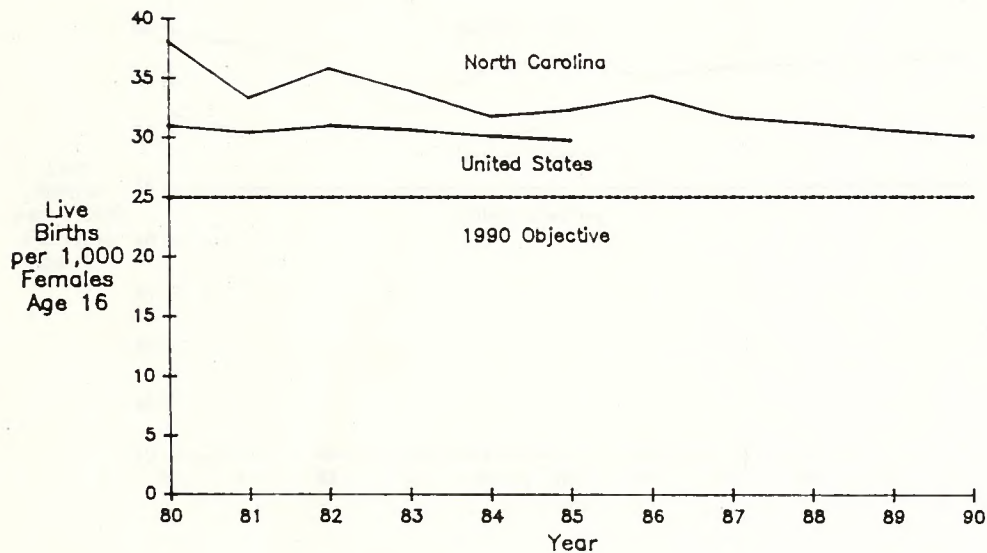




# FERTILITY RATES FOR GIRLS 16 YEARS OF AGE NORTH CAROLINA AND UNITED STATES 1980-1986

Year	North Carolina	United States
1980	38.1	31.0
1981	33.3	30.4
1982	35.8	31.0
1983	33.9	30.6
1984	31.7	30.1
1985	32.3	29.7
1986	33.5	NA

FERTILITY RATES FOR GIRLS 16 YEARS OF AGE  
NORTH CAROLINA AND UNITED STATES  
1980-1986, NORTH CAROLINA PROJECTED TO 1990



## FERTILITY RATE FOR GIRLS 17 YEARS OF AGE

### Objective

By 1990, the fertility rate for girls 17 years of age should be reduced to 45 per 1,000.

### Explanatory Notes

The fertility rate is calculated as the number of resident live births to girls 17 years of age per 1,000 female population 17 years of age. N.C. population bases for single years of age are not available prior to 1980.

### Findings

The North Carolina rate has consistently run above the nation's and is projected to rise to 57.0 in 1990. The nation also is not expected to meet this objective (3).

### Data Sources

North Carolina: State Center for Health Statistics

United States: National Center for Health Statistics

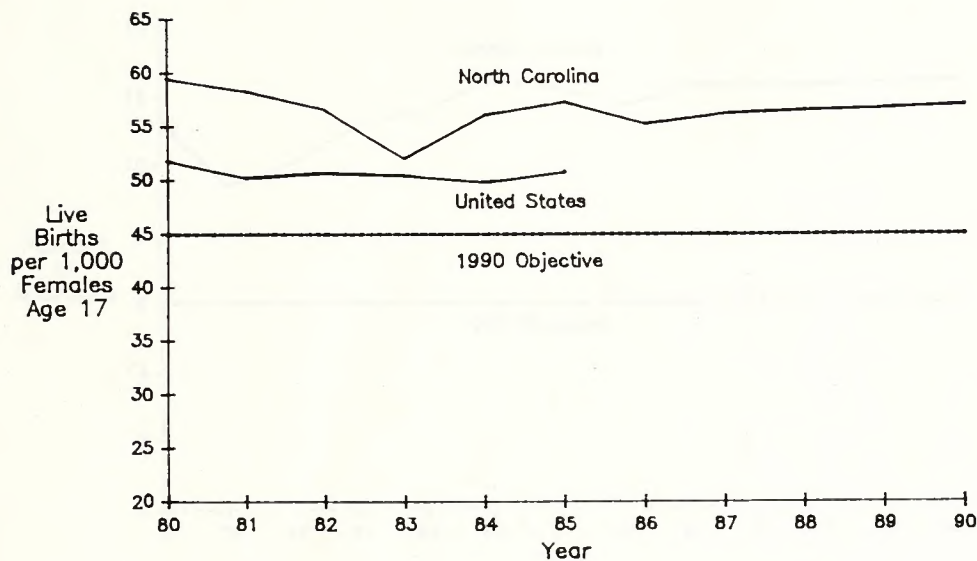




# **FERTILITY RATES FOR GIRLS 17 YEARS OF AGE NORTH CAROLINA AND UNITED STATES 1980-1986**

Year	North Carolina	United States
1980	59.5	51.8
1981	58.3	50.2
1982	56.6	50.7
1983	52.0	50.4
1984	56.1	49.8
1985	57.3	50.8
1986	55.2	NA

## **FERTILITY RATES FOR GIRLS 17 YEARS OF AGE NORTH CAROLINA AND UNITED STATES 1980-1986, NORTH CAROLINA PROJECTED TO 1990**



## PERCENT OF ABORTIONS PERFORMED IN THE SECOND TRIMESTER

### Objective

By 1990, the proportion of abortions performed in the second trimester of pregnancy should be reduced to 6 percent, thereby reducing the death-to-case rate for legal abortions in the U.S. to 0.5 per 100,000.

### Explanatory Notes

This objective was not addressed in the nation's *Midcourse Review* (3). North Carolina data prior to 1978 may not be reliable and are not included.

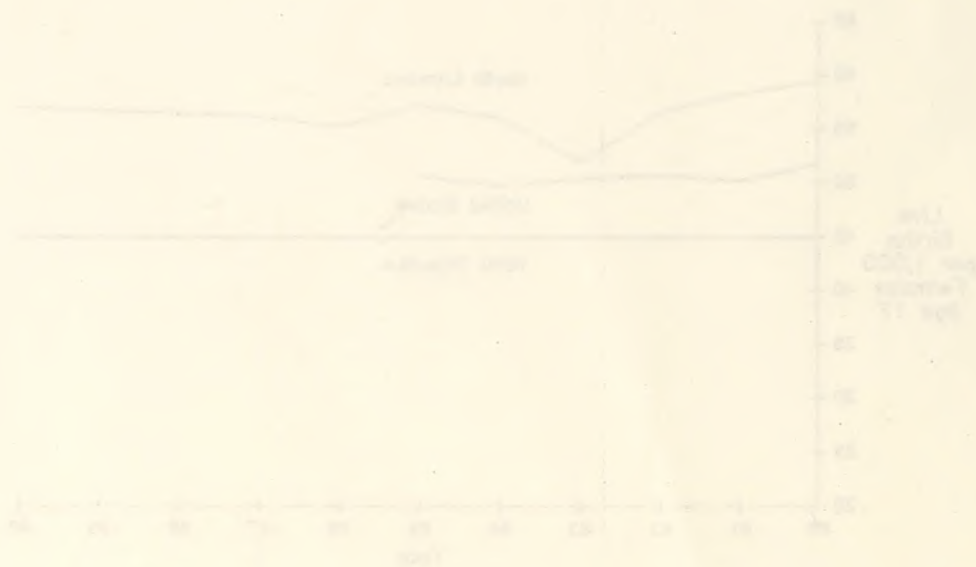
### Findings

During the period 1978-1986, the percentage of resident abortions performed in the second trimester fluctuated between 9.4 and 12.5 to end at 12.3 in 1986. Based on 1982-1986 trends, the percentage is projected to rise slightly to 12.4 in 1990, which is more than double the national target.

During 1978-1986, no maternal deaths due to legal abortion were reported for N.C. residents.

### Data Source

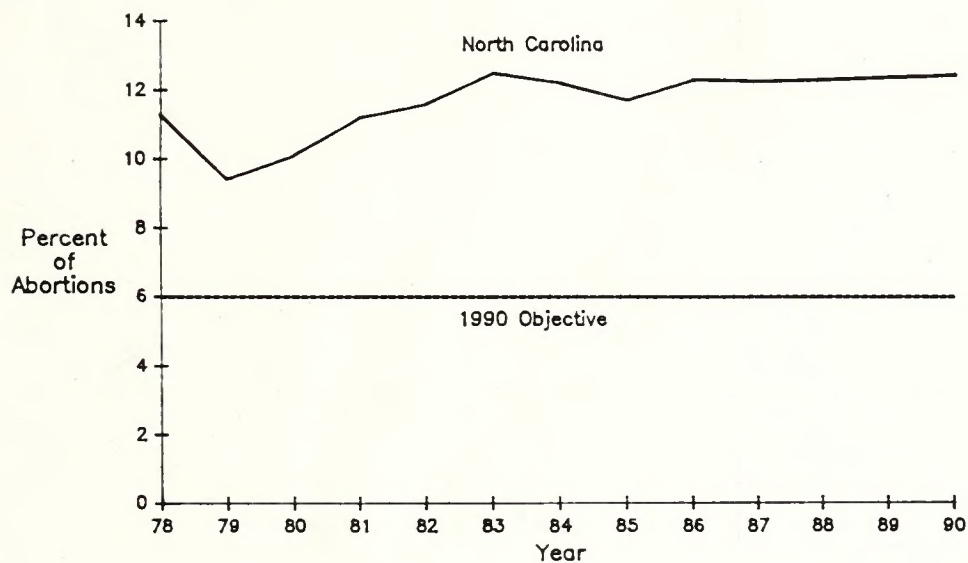
State Center for Health Statistics



**PERCENTAGE OF ABORTIONS PERFORMED IN  
THE SECOND TRIMESTER  
NORTH CAROLINA 1978-1986**

Year	Percentage
1978	11.3
1979	9.4
1980	10.1
1981	11.2
1982	11.6
1983	12.5
1984	12.2
1985	11.7
1986	12.3

PERCENTAGE OF ABORTIONS PERFORMED IN  
THE SECOND TRIMESTER  
NORTH CAROLINA, 1978-1986 AND PROJECTED TO 1990







## PREGNANCY AND INFANT HEALTH

## INFANT DEATH RATE

### Objective

By 1990, the national infant mortality rate should be reduced to no more than nine deaths per 1,000 live births.

### Explanatory Notes

Infant deaths are deaths of residents under one year of age.

### Findings

The state rate has declined 52 percent since 1970 compared to 48 percent nationwide. The state's 1986 rate was still 12 percent above the nation's. Based on changes between 1982 and 1986, the North Carolina rate is projected to decline to 9.7 in 1990. The nation's achievement of this objective appears questionable (3).

### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics

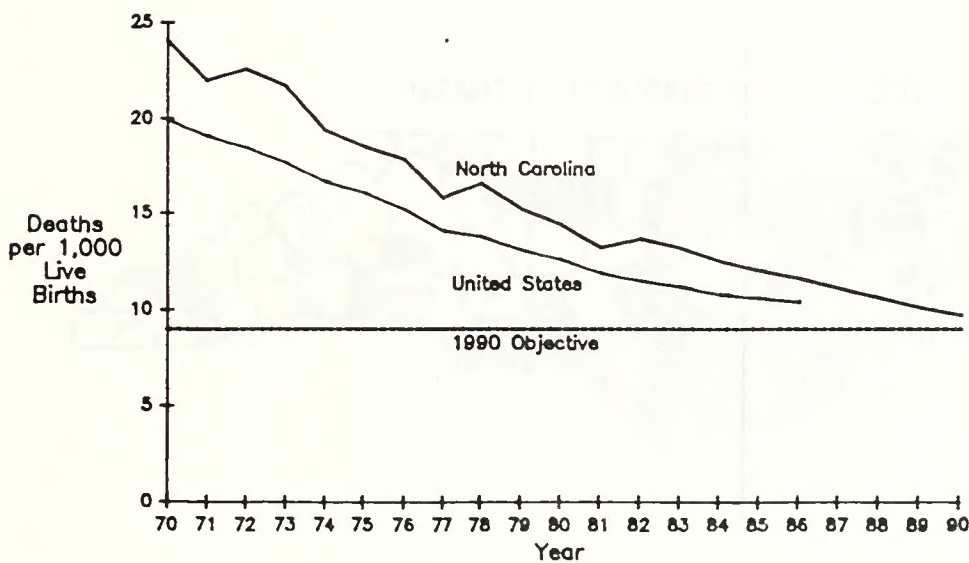


# **INFANT DEATH RATES NORTH CAROLINA AND UNITED STATES 1970-1986**

Year	North Carolina	United States
1970	24.1	20.0
1971	22.0	19.1
1972	22.6	18.5
1973	21.7	17.7
1974	19.4	16.7
1975	18.5	16.1
1976	17.8	15.2
1977	15.8	14.1
1978	16.6	13.8
1979	15.2	13.1
1980	14.4	12.6
1981	13.2	11.9
1982	13.7	11.5
1983	13.2	11.2
1984	12.5	10.8
1985	12.0	10.6
1986	11.6	10.4*

\*Provisional data.

## **INFANT DEATH RATES NORTH CAROLINA AND UNITED STATES 1970-1986, NORTH CAROLINA PROJECTED TO 1990**





## INFANT DEATH RATES BY COUNTY AND RACE

### Objective

By 1990, no county and no racial or ethnic group of the population should have an infant mortality rate in excess of 12 deaths per 1,000 live births.

### Explanatory Notes

Infant deaths are deaths of residents under one year of age. In order to present more stable rates, county rates are for the 5-year period 1982-86. For purposes of this report, infant death rates by race are calculated for whites and nonwhites.

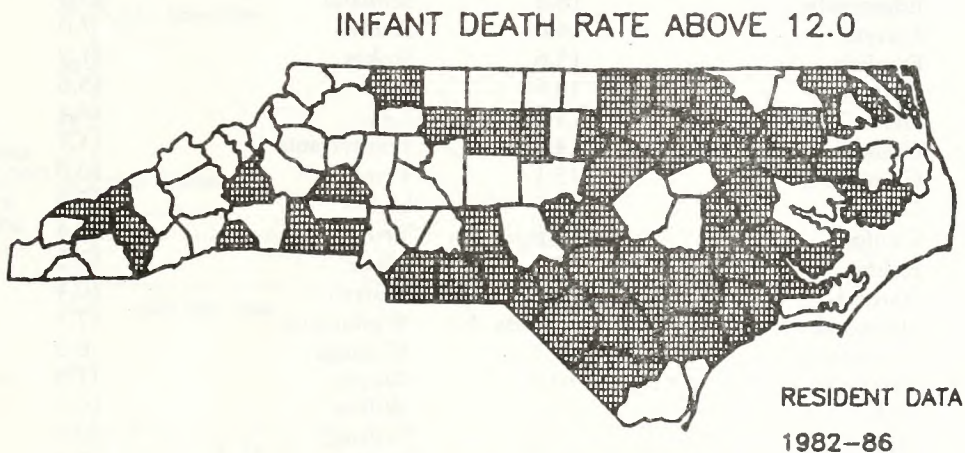
### Findings

For the period 1982-86, the state as a whole and 50 of the 100 counties experienced infant death rates above 12.0. The county rates ranged from 4.4 in Graham to 20.4 in Warren, as shown on page 20.

The infant death rate for North Carolina whites is projected to continue to decline to about 7.8 in 1990. The rate for nonwhites is also expected to decline but to only about 14.1. Nationally, it appears unlikely that this objective will be met by Blacks or nonwhites as a whole (3).

### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics





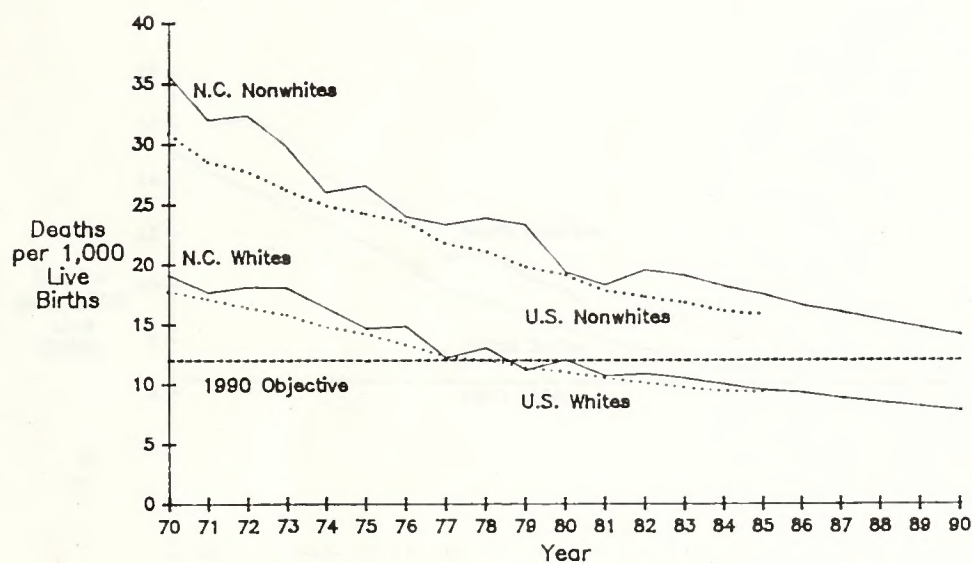
# **INFANT DEATH RATES BY COUNTY NORTH CAROLINA 1982-86**

<b>Residence</b>	<b>Rate</b>	<b>Residence</b>	<b>Rate</b>
North Carolina	12.6	Johnston	10.4
Alamance	12.7	Jones	18.2
Alexander	11.3	Lee	14.3
Alleghany	6.1	Lenoir	15.4
Anson	18.2	Lincoln	11.6
Ashe	9.3	McDowell	14.7
Avery	5.2	Macon	10.9
Beaufort	10.2	Madison	10.9
Bertie	16.8	Martin	14.2
Bladen	13.6	Mecklenburg	11.7
Brunswick	8.8	Mitchell	7.4
Buncombe	10.2	Montgomery	15.5
Burke	10.8	Moore	10.8
Cabarrus	10.4	Nash	18.3
Caldwell	9.5	New Hanover	10.7
Camden	5.7	Northampton	8.3
Carteret	11.1	Onslow	12.3
Caswell	9.5	Orange	11.4
Catawba	13.9	Pamlico	16.4
Chatham	11.9	Pasquotank	12.2
Cherokee	7.2	Pender	13.8
Chowan	16.6	Perquimans	7.2
Clay	5.1	Person	11.8
Cleveland	14.7	Pitt	13.9
Columbus	15.0	Polk	12.6
Craven	13.6	Randolph	9.9
Cumberland	13.1	Richmond	16.1
Currituck	19.1	Robeson	14.1
Dare	7.3	Rockingham	12.0
Davidson	11.0	Rowan	9.7
Davie	10.5	Rutherford	10.4
Duplin	15.3	Sampson	13.1
Durham	14.4	Scotland	15.4
Edgecombe	16.8	Stanly	7.0
Forsyth	14.0	Stokes	11.9
Franklin	15.6	Surry	15.6
Gaston	13.5	Swain	16.4
Gates	15.9	Transylvania	11.1
Graham	4.4	Tyrrell	10.0
Granville	15.1	Union	12.5
Greene	14.9	Vance	17.4
Guilford	12.9	Wake	13.9
Halifax	15.1	Warren	20.4
Harnett	12.5	Washington	17.1
Haywood	9.1	Watauga	6.3
Henderson	9.3	Wayne	11.8
Hertford	10.9	Wilkes	10.5
Hoke	12.7	Wilson	10.9
Hyde	18.3	Yadkin	9.4
Iredell	10.4	Yancey	9.3
Jackson	15.6		

# **INFANT DEATH RATES BY RACE NORTH CAROLINA AND UNITED STATES 1970-1986**

Year	Whites		Nonwhites	
	North Carolina	United States	North Carolina	United States
1970	19.2	17.8	35.8	30.9
1971	17.7	17.1	32.0	28.5
1972	18.2	16.4	32.4	27.7
1973	18.1	15.8	29.8	26.2
1974	16.4	14.8	26.0	24.9
1975	14.7	14.2	26.6	24.2
1976	14.9	13.3	24.0	23.5
1977	12.2	12.3	23.3	21.7
1978	13.1	12.0	23.9	21.1
1979	11.2	11.4	23.3	19.8
1980	12.1	11.0	19.4	19.1
1981	10.7	10.5	18.3	17.8
1982	10.9	10.1	19.6	17.3
1983	10.5	9.7	19.1	16.8
1984	10.0	9.4	18.2	16.1
1985	9.5	9.4	17.5	15.8
1986	9.3	NA	16.6	NA

## **INFANT DEATH RATES BY RACE NORTH CAROLINA AND UNITED STATES 1970-1986, NORTH CAROLINA PROJECTED TO 1990**



## NEONATAL DEATH RATE

### Objective

By 1990, the neonatal death rate should be reduced to no more than 6.5 deaths per 1,000 live births.

### Explanatory Notes

Neonatal deaths are deaths of residents under 28 days of age.

### Findings

The North Carolina neonatal death rate is projected to continue its decline to about 6.2 in 1990, below the national objective of 6.5. The U.S. is also expected to meet the objective (3).

### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics

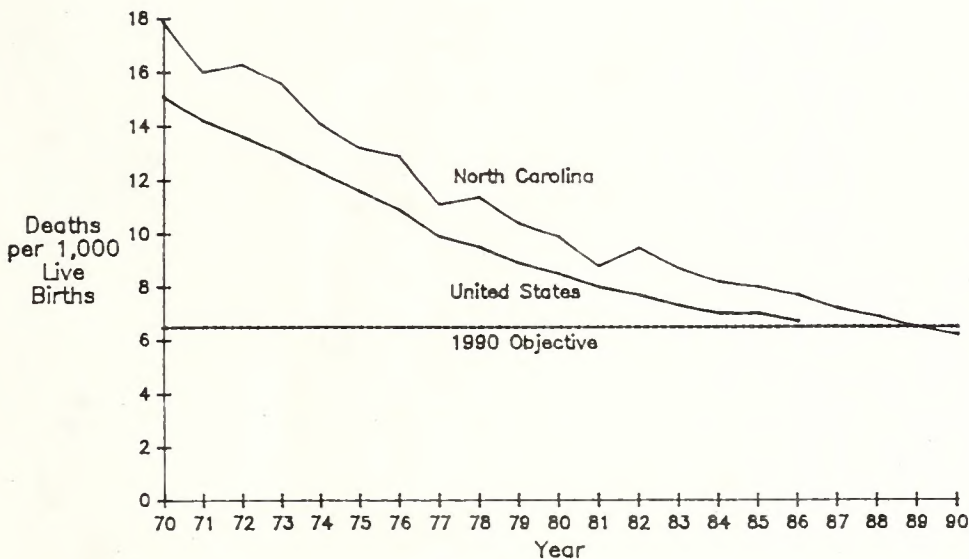


# **NEONATAL DEATH RATES NORTH CAROLINA AND UNITED STATES 1970-1986**

Year	North Carolina	United States
1970	17.9	15.1
1971	16.0	14.2
1972	16.3	13.6
1973	15.6	13.0
1974	14.1	12.3
1975	13.2	11.6
1976	12.9	10.9
1977	11.1	9.9
1978	11.4	9.5
1979	10.4	8.9
1980	9.9	8.5
1981	8.8	8.0
1982	9.5	7.7
1983	8.7	7.3
1984	8.2	7.0
1985	8.0	7.0
1986	7.7	6.7*

\*Provisional data.

## **NEONATAL DEATH RATES NORTH CAROLINA AND UNITED STATES 1970-1986, NORTH CAROLINA PROJECTED TO 1990**





## MATERNAL DEATH RATES BY COUNTY AND RACE

### Objective

By 1990, the maternal mortality rate should not exceed five per 100,000 live births for any county or for any ethnic group (e.g., Black, Hispanic, American Indian).

### Explanatory Notes

Includes ICD codes 630-676 of the Ninth Revision and 630-678 of the Eighth Revision. County rates are for the five-year period 1982-86.

### Findings

As shown in the table on page 26, twenty-seven of the state's 100 counties experienced some maternal mortality during 1982-86. However, 19 of the 27 counties experienced only one death and five experienced only two. Due to the instability of rates based on such small numbers, the application of this objective to counties seems ill-advised and county rates have not been calculated.

The state's white maternal death rate was below 5.0 in three of the last five years and is projected to decline to about 1.0 in 1990. The nonwhite maternal death rate remains well above 5.0 but is projected to decline to about 6.2 in 1990. Nationally, it appears unlikely that this objective will be met for any race group, and it has been suggested that the numerical objective for counties be dropped and the objective be revised as follows: By 1990, the three-year-average maternal mortality rate should not exceed five per 100,000 live births for any racial or ethnic group (e.g., Black, Hispanic, Native American) (3).

### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics



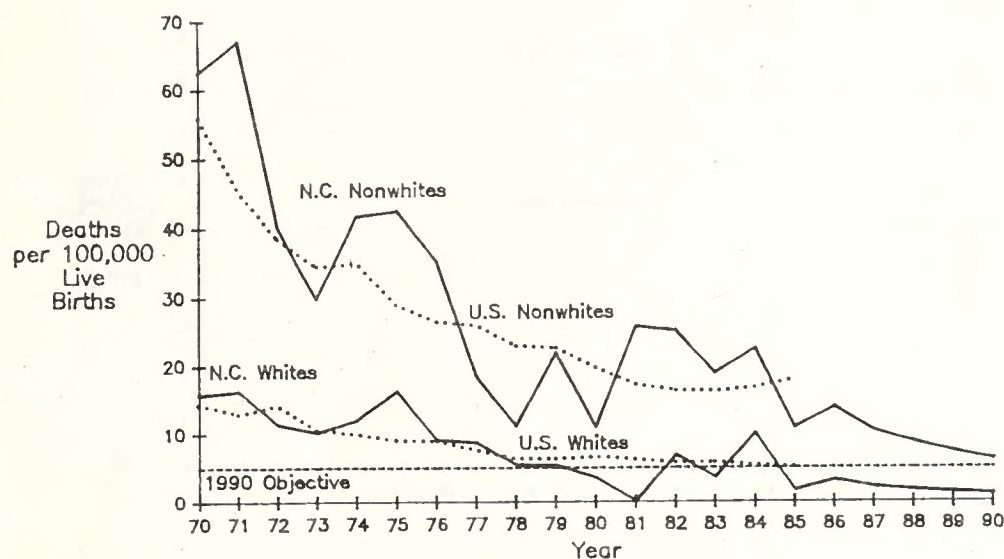
# **MATERNAL DEATHS BY COUNTY NORTH CAROLINA 1982-86**

<b>Residence</b>	<b>Number of Deaths</b>
North Carolina	40
Beaufort	1
Cabarrus	1
Caldwell	1
Columbus	1
Craven	2
Cumberland	2
Davidson	1
Edgecombe	1
Halifax	3
Harnett	2
Haywood	1
Iredell	1
Lee	1
Macon	1
Mecklenburg	2
Nash	1
New Hanover	1
Onslow	1
Orange	1
Randolph	1
Robeson	2
Rowan	1
Sampson	1
Surry	1
Vance	1
Wake	3
Wayne	5

# **MATERNAL DEATH RATES BY RACE NORTH CAROLINA AND UNITED STATES 1970-1986**

Year	Whites		Nonwhites	
	North Carolina	United States	North Carolina	United States
1970	15.8	14.4	62.5	55.9
1971	16.4	13.0	67.1	45.3
1972	11.4	14.3	40.2	38.5
1973	10.2	10.7	29.9	34.6
1974	12.1	10.0	41.7	35.1
1975	16.4	9.1	42.5	29.0
1976	9.1	9.0	35.3	26.5
1977	8.7	7.7	18.5	26.0
1978	5.4	6.4	11.2	23.0
1979	5.3	6.4	22.0	22.7
1980	3.5	6.7	11.0	19.8
1981	0.0	6.3	25.9	17.3
1982	6.9	5.8	25.2	16.4
1983	3.5	5.9	18.9	16.3
1984	10.1	5.4	22.6	16.9
1985	1.6	5.2	10.9	18.1
1986	3.2	NA	14.0	NA

MATERNAL DEATH RATES BY RACE  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990



## PERCENT OF LIVE BIRTHS WITH LOW BIRTHWEIGHT

### Objective

By 1990, low birthweight babies (under 2,500 grams) should constitute no more than five percent of all live births.

### Findings

The North Carolina rate has consistently exceeded the nation's and is projected to fall only slightly to 7.8 in 1990. Nationally, it also appears unlikely that this objective will be met (3).

### Data Sources

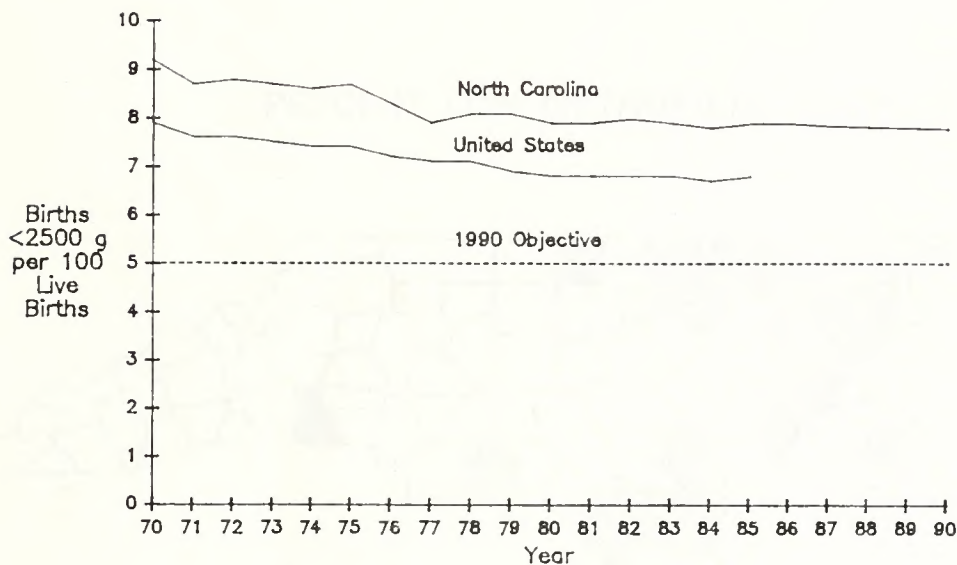
North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics



**PERCENT OF LIVE BIRTHS UNDER 2,500 GRAMS  
NORTH CAROLINA AND UNITED STATES  
1970-1986**

Year	North Carolina	United States
1970	9.2	7.9
1971	8.7	7.6
1972	8.8	7.6
1973	8.7	7.5
1974	8.6	7.4
1975	8.7	7.4
1976	8.3	7.2
1977	7.9	7.1
1978	8.1	7.1
1979	8.1	6.9
1980	7.9	6.8
1981	7.9	6.8
1982	8.0	6.8
1983	7.9	6.8
1984	7.8	6.7
1985	7.9	6.8
1986	7.9	NA

**PERCENT OF LIVE BIRTHS UNDER 2500 GRAMS  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990**





## PERCENT OF LIVE BIRTHS WITH LOW BIRTHWEIGHT BY COUNTY AND RACE

### Objective

By 1990, no county and no racial or ethnic group of the population (e.g., Black, Hispanic, American Indian) should have a rate of low birthweight infants that exceeds nine percent of all live births.

### Explanatory Notes

Low birthweight infants are those weighing under 2,500 grams at birth. In order to present more stable rates, county rates are for the five-year period 1982-86. For purposes of this report, low birthweight rates (percentages) by race are calculated for whites and nonwhites.

### Findings

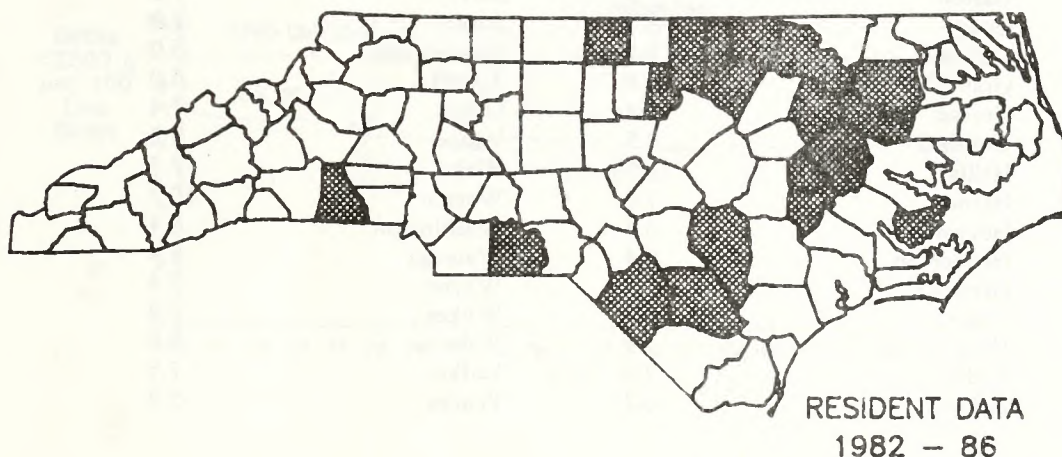
During 1982-86, nineteen of the state's 100 counties experienced low birthweight rates above 9.0 percent as shown on page 32. Thirteen of those 19 rates were under 10.0 percent, however. For all 100 counties, the percentages ranged from 4.6 in Clay to 11.0 in Edgecombe.

The low birthweight percentage for North Carolina whites has fluctuated only slightly during the eighties. The nonwhite percentage was the same in 1986 as in 1980 and still 31 percent above the national target. Nationally, this objective has been met for each racial or ethnic group except Blacks whose 1990 projected rate is 12.1 percent (3).

### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics

## PERCENT LOW BIRTHWEIGHT ABOVE 9.0





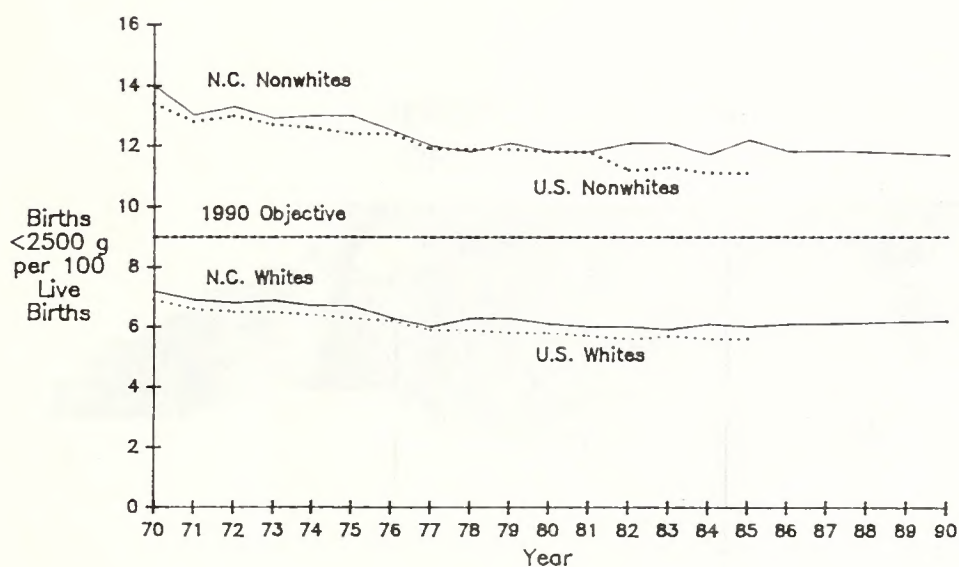
# PERCENT OF LIVE BIRTHS UNDER 2,500 GRAMS BY COUNTY NORTH CAROLINA 1982-86

Residence	Percent	Residence	Percent
North Carolina	7.9	Johnston	8.2
Alamance	8.0	Jones	8.3
Alexander	6.2	Lee	7.4
Alleghany	7.3	Lenoir	9.2
Anson	10.6	Lincoln	6.6
Ashe	7.1	McDowell	6.7
Avery	5.0	Macon	6.9
Beaufort	7.8	Madison	6.5
Bertie	10.2	Martin	9.2
Bladen	9.3	Mecklenburg	8.0
Brunswick	7.2	Mitchell	7.3
Buncombe	7.1	Montgomery	8.9
Burke	8.2	Moore	7.7
Cabarrus	7.9	Nash	8.1
Caldwell	7.9	New Hanover	8.2
Camden	7.2	Northampton	8.8
Carteret	6.5	Onslow	6.4
Caswell	10.0	Orange	6.6
Catawba	7.9	Pamlico	9.4
Chatham	7.6	Pasquotank	8.7
Cherokee	5.2	Pender	8.4
Chowan	6.8	Perquimans	7.7
Clay	4.6	Person	7.7
Cleveland	9.2	Pitt	9.4
Columbus	8.5	Polk	6.3
Craven	7.5	Randolph	7.0
Cumberland	7.5	Richmond	8.5
Currituck	7.1	Robeson	9.2
Dare	5.9	Rockingham	7.4
Davidson	7.6	Rowan	7.0
Davie	6.1	Rutherford	8.0
Duplin	7.6	Sampson	9.4
Durham	9.5	Scotland	8.6
Edgecombe	11.0	Stanly	6.9
Forsyth	8.5	Stokes	7.6
Franklin	9.9	Surry	7.6
Gaston	7.5	Swain	7.9
Gates	8.5	Transylvania	6.0
Graham	5.5	Tyrrell	6.0
Granville	10.0	Union	7.4
Greene	9.3	Vance	9.2
Guilford	8.5	Wake	7.7
Halifax	9.5	Warren	10.2
Harnett	7.0	Washington	8.4
Haywood	6.6	Watauga	4.9
Henderson	6.4	Wayne	7.4
Hertford	8.9	Wilkes	6.9
Hoke	8.7	Wilson	8.6
Hyde	7.9	Yadkin	7.5
Iredell	7.8	Yancey	5.8
Jackson	6.2		

**PERCENT OF LIVE BIRTHS UNDER 2,500 GRAMS BY RACE  
NORTH CAROLINA AND UNITED STATES  
1970-1986**

Year	Whites		Nonwhites	
	North Carolina	United States	North Carolina	United States
1970	7.2	6.9	14.0	13.4
1971	6.9	6.6	13.0	12.8
1972	6.8	6.5	13.3	13.0
1973	6.9	6.5	12.9	12.7
1974	6.7	6.4	13.0	12.6
1975	6.7	6.3	13.0	12.4
1976	6.3	6.2	12.5	12.4
1977	6.0	5.9	12.0	11.9
1978	6.3	5.9	11.8	11.9
1979	6.3	5.8	12.1	11.9
1980	6.1	5.8	11.8	11.8
1981	6.0	5.7	11.8	11.8
1982	6.0	5.6	12.1	11.2
1983	5.9	5.7	12.1	11.3
1984	6.1	5.6	11.7	11.1
1985	6.0	5.6	12.2	11.1
1986	6.1	NA	11.8	NA

**PERCENT OF LIVE BIRTHS UNDER 2500 GRAMS BY RACE  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990**







## PERCENT OF MOTHERS OBTAINING NO PRENATAL CARE IN FIRST TRIMESTER BY COUNTY AND RACE

### Objective

By 1990, the proportion of women in any county or racial or ethnic group (e.g., Black, Hispanic, American Indian) who obtain no prenatal care during the first trimester of pregnancy should not exceed 10 percent.

### Explanatory Notes

These percentages are based on live births, and those with unknown month of first prenatal care visit have been eliminated from the denominator. By race, percentages are calculated for whites and nonwhites. N.C. data were not tabulated prior to 1974.

### Findings

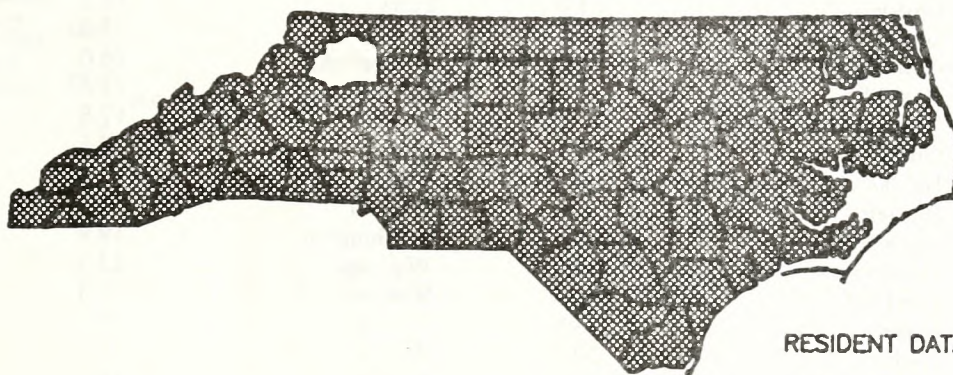
In 1986, all counties except Wilkes exceeded the national objective of 10 percent. The county percentages ranged from 9.7 in Wilkes to 40.4 in Sampson. Closest to Wilkes in achieving the target were Stokes (11.4%), Dare (12.6%), and Chowan (12.8%). See table on page 36.

For whites, the percentage of mothers obtaining no care in the first trimester has consistently been lower in North Carolina than in the U.S. This is also true for nonwhites, beginning in 1982. However, an increase in the N.C. nonwhite percentage occurred in 1986, and for both race groups, projections based on 1982-1986 trends suggest little further improvement by 1990. The U.S. also is not expected to meet this objective for any race group. Four states are projected to meet the goal for white women but none is expected to achieve the goal for minorities (3).

### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics

### PERCENT NO PRENATAL CARE IN FIRST TRIMESTER ABOVE 10.0



RESIDENT DATA  
1986

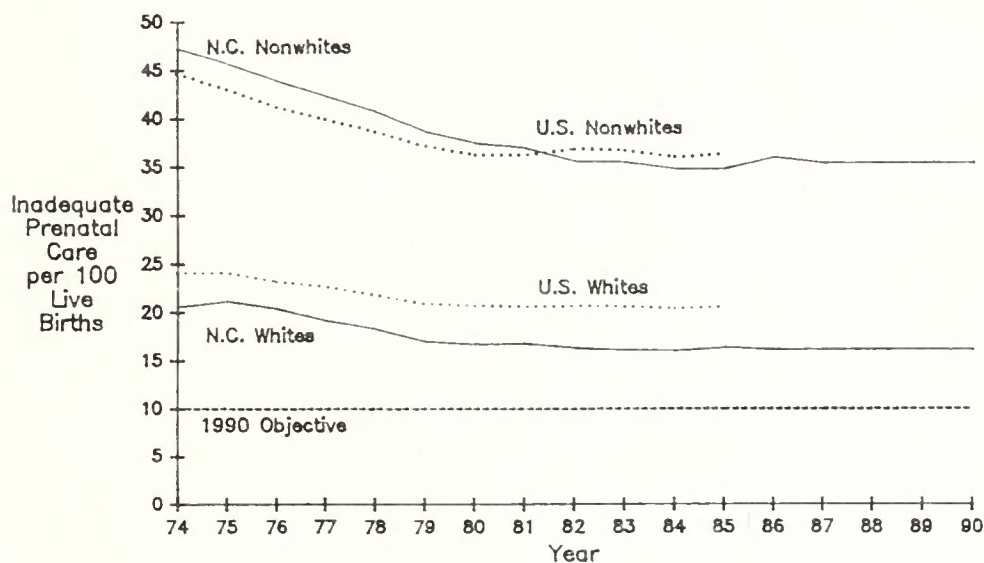
**PERCENT OF MOTHERS OBTAINING NO PRENATAL CARE  
IN FIRST TRIMESTER BY COUNTY  
NORTH CAROLINA 1986**

Residence	Percent	Residence	Percent
North Carolina	22.3	Johnston	35.3
Alamance	21.5	Jones	25.2
Alexander	18.0	Lee	25.9
Alleghany	15.5	Lenoir	31.0
Anson	36.4	Lincoln	16.9
Ashe	14.8	McDowell	22.7
Avery	21.7	Macon	15.3
Beaufort	16.0	Madison	18.0
Bertie	21.2	Martin	19.9
Bladen	29.7	Mecklenburg	14.5
Brunswick	27.4	Mitchell	13.0
Buncombe	16.9	Montgomery	20.4
Burke	18.8	Moore	18.2
Cabarrus	35.6	Nash	39.6
Caldwell	26.0	New Hanover	26.9
Camden	21.1	Northampton	29.9
Carteret	22.6	Onslow	24.6
Caswell	28.2	Orange	13.4
Catawba	16.3	Pamlico	31.3
Chatham	19.4	Pasquotank	17.1
Cherokee	17.2	Pender	32.0
Chowan	12.8	Perquimans	19.9
Clay	15.5	Person	18.8
Cleveland	31.5	Pitt	16.1
Columbus	29.1	Polk	18.9
Craven	25.9	Randolph	21.0
Cumberland	21.4	Richmond	23.4
Currituck	17.5	Robeson	38.3
Dare	12.6	Rockingham	23.2
Davidson	24.4	Rowan	35.6
Davie	17.0	Rutherford	21.8
Duplin	27.2	Sampson	40.4
Durham	17.7	Scotland	38.8
Edgecombe	37.1	Stanly	26.6
Forsyth	13.2	Stokes	11.4
Franklin	20.6	Surry	16.2
Gaston	24.0	Swain	25.8
Gates	19.1	Transylvania	26.0
Graham	23.7	Tyrrell	24.6
Granville	20.2	Union	17.8
Greene	26.7	Vance	27.5
Guilford	19.7	Wake	15.4
Halifax	31.1	Warren	26.0
Harnett	27.8	Washington	19.9
Haywood	21.2	Watauga	13.5
Henderson	22.0	Wayne	36.3
Hertford	24.3	Wilkes	9.7
Hoke	24.6	Wilson	25.7
Hyde	20.0	Yadkin	16.1
Iredell	31.0	Yancey	13.3
Jackson	15.6		

**PERCENT OF MOTHERS OBTAINING NO PRENATAL CARE  
IN FIRST TRIMESTER BY RACE  
NORTH CAROLINA AND UNITED STATES  
1974-1986**

Year	Whites		Nonwhites	
	North Carolina	United States	North Carolina	United States
1974	20.6	24.1	47.3	44.7
1975	21.2	24.1	45.7	43.0
1976	20.4	23.2	43.9	41.2
1977	19.2	22.7	42.3	39.9
1978	18.3	21.8	40.7	38.6
1979	17.0	20.9	38.6	37.1
1980	16.7	20.7	37.4	36.2
1981	16.8	20.6	36.9	36.2
1982	16.3	20.7	35.5	36.8
1983	16.1	20.6	35.4	36.6
1984	16.0	20.4	34.7	35.9
1985	16.4	20.6	34.7	36.3
1986	16.1	NA	35.9	NA

**PERCENT OF MOTHERS OBTAINING NO PRENATAL CARE  
IN FIRST TRIMESTER BY RACE  
NORTH CAROLINA AND UNITED STATES  
1974-1986, NORTH CAROLINA PROJECTED TO 1990**





## PERCENT OF MOTHERS NOT ATTENDED BY A PHYSICIAN OR MIDWIFE

### Objective

By 1990, virtually all women who give birth should have appropriately attended, safe delivery, provided in ways acceptable to them and their families.

### Explanatory Notes

Assumes that "appropriately attended, safe delivery" means delivery attended by a physician or midwife. U.S. data were not comparably tabulated prior to 1975. No data are available on deliveries "provided in ways acceptable to women and their families." In North Carolina since 1980, certified nurse midwives have accounted for 98 to more than 99 percent of all midwife deliveries.

### Findings

With the N.C. percentage of unattended deliveries falling well below one percent, a goal of "virtually all" can be claimed. The higher N.C. percentages beginning in 1979 may reflect an increase in the number of women who by choice sought alternative birthing arrangements (3).

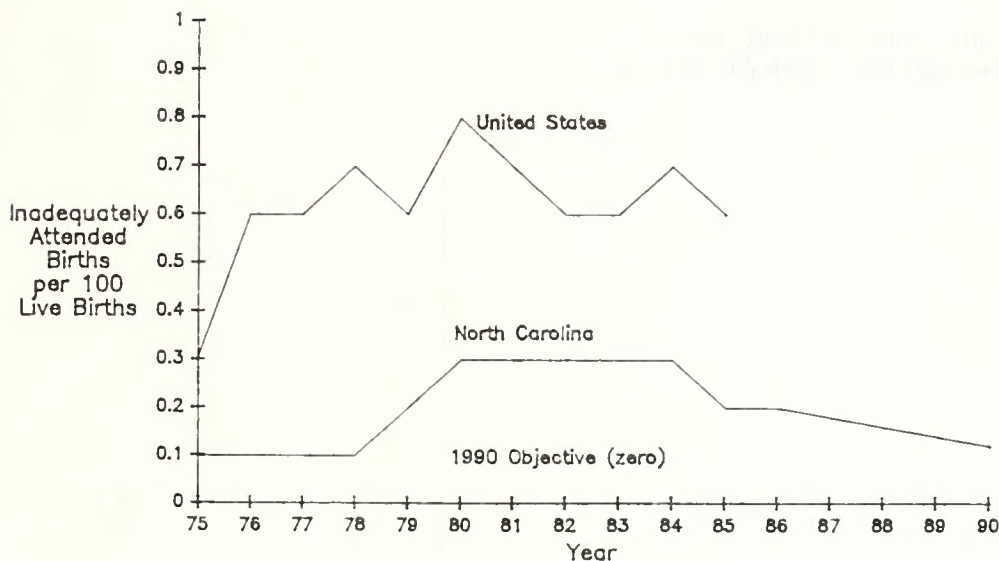
### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics

**PERCENT OF MOTHERS NOT ATTENDED  
BY A PHYSICIAN OR MIDWIFE  
NORTH CAROLINA AND UNITED STATES  
1975-1986**

Year	North Carolina	United States
1975	.1	.3
1976	.1	.6
1977	.1	.6
1978	.1	.7
1979	.2	.6
1980	.3	.8
1981	.3	.7
1982	.3	.6
1983	.3	.6
1984	.3	.7
1985	.2	.6
1986	.2	NA

**PERCENT OF MOTHERS NOT ATTENDED  
BY A PHYSICIAN OR MIDWIFE  
NORTH CAROLINA AND UNITED STATES  
1975-1986, NORTH CAROLINA PROJECTED TO 1990**



# PERCENT OF NEWBORNS SCREENED FOR METABOLIC DISORDERS

## Objective

By 1990, virtually all newborns should be provided neonatal screening for metabolic disorders for which effective and efficient tests and treatments are available [for example, phenylketonuria (PKU) and congenital hypothyroidism].

## Explanatory Notes

In 1985, all 50 states and D.C. had newborn screening programs that included at a minimum PKU and hypothyroidism. However, not every state enforces the testing, and detailed data for the percent of neonates screened are not available for every state. (3)

North Carolina does not have a mandatory state testing law, but infants born in hospitals are routinely screened for PKU and hypothyroidism. Since July 1987, nonwhite newborns have been screened for sickle cell, and screening for galactosemia is expected to become statewide in the early months of 1988.

Prior to data year 1985, first tests of newborns are not distinguishable from repeat tests; therefore, the percent of newborns screened in earlier years is indeterminable. The 1985 and 1986 percentages relate tests for infants born in N.C. to births occurring in N.C.

## Findings

In North Carolina, the percentage of newborns screened was 94.1 in 1985 and 97.8 in 1986. Reasons for the difference in these rates are unknown.

Although the goal of "virtually all" cannot be claimed, North Carolina's 1986 screening rate was high, especially considering the absence of a mandatory testing law. One reason undoubtedly is physician concerns about liability for failure to diagnose an affected infant.

## Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics



# IMMUNIZATION

The immunization program in the United States has been a success story. The immunization rate for children under 15 years of age has increased from 55% in 1960 to 95% in 1990. This increase is due to a number of factors, including the development of new vaccines, the implementation of mandatory immunization laws, and the establishment of the National Immunization Program in 1962.

The National Immunization Program was established in 1962 to coordinate the efforts of the federal government, state and local health departments, and the private sector. The program has been successful in increasing the immunization rate for children under 15 years of age from 55% in 1960 to 95% in 1990. This increase is due to a number of factors, including the development of new vaccines, the implementation of mandatory immunization laws, and the establishment of the National Immunization Program in 1962.



## **PERCENT OF KINDERGARTEN AND FIRST GRADE CHILDREN WHO ARE FULLY IMMUNIZED**

### **Objective**

By 1990, at least 95 percent of children attending licensed day care facilities and kindergarten through 12th grade should be fully immunized.

### **Explanatory Notes**

Trend data available for North Carolina are for kindergarten and first grade children and are not strictly comparable to the national objective. For both the state and the nation, however, minimum requirements for all children were the same during the period 1980-1986: 3 doses of DTP, 3 doses of OPV, 1 dose of measles, and 1 dose of rubella vaccine. Beginning in 1987, North Carolina's immunization law was changed to require 5 DTP, 4 OPV, 1 measles, 1 rubella, and 1 mumps vaccine for children entering kindergarten and first grade.

### **Findings**

The North Carolina percentage of kindergarten and first grade children who met minimum immunization requirements far exceeded the national objective in all years 1980-1986. The state rates of 98 to 99 percent compare to 96 percent for U.S. kindergarten and first grade entrants in 1984-85 (3). A high immunization level (98.4%) was also observed among N.C. children in grades 2-12 when those children were assessed in 1980.

Based on 1978-1984 trends, the U.S. is projected to meet this objective by 1990 (3). However, vaccine price increases and parental fears of the DTP vaccine could serve to reduce immunization levels throughout the country.

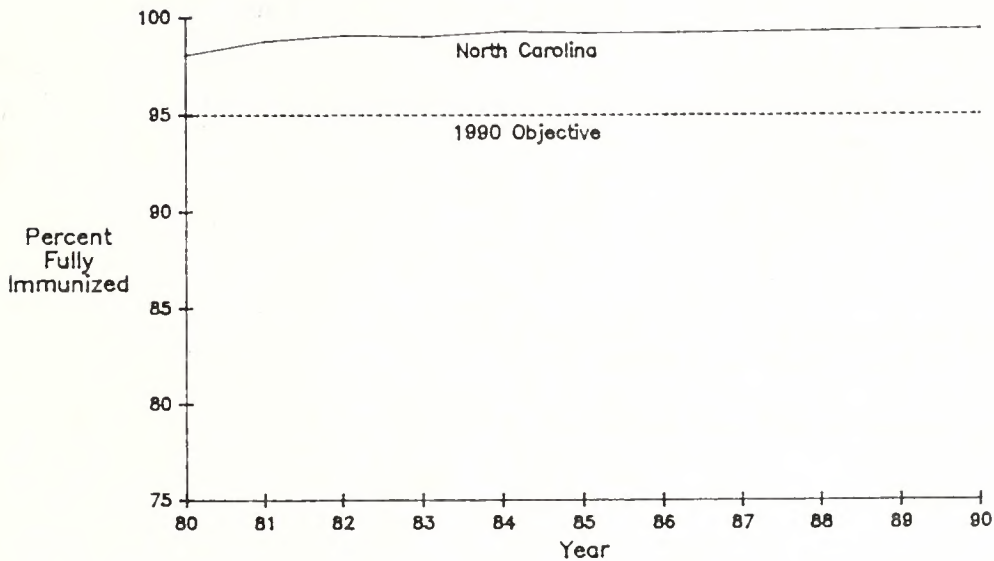
### **Data Source**

Communicable Disease Control Branch  
N.C. Division of Health Services

**PERCENT OF KINDERGARTEN AND FIRST GRADE  
CHILDREN WHO ARE FULLY IMMUNIZED  
NORTH CAROLINA 1980-1986**

Year	Percent Immunized
1980	98.1
1981	98.8
1982	99.1
1983	99.0
1984	99.3
1985	99.2
1986	99.2

**PERCENT OF KINDERGARTEN AND FIRST GRADE  
CHILDREN WHO ARE FULLY IMMUNIZED  
NORTH CAROLINA, 1980-1986, PROJECTED TO 1990**





## PERCENT OF TWO-YEAR-OLDS WHO HAVE COMPLETED THE BASIC IMMUNIZATION SERIES

### Objective

By 1990, at least 90 percent of all children should have completed their basic immunization series by age two—measles, mumps, rubella, polio, diphtheria, tetanus, and pertussis.

### Explanatory Notes

The national objective for 1990 includes vaccination against mumps whereas assessments of two-year-olds in North Carolina have not previously included mumps in the basic series because it was recommended but not required. Beginning in 1987, mumps vaccination is required in North Carolina, and the number of required DTPs and OPVs has been increased to 4 and 3 respectively for infants one year of age.

### Findings

For completion of the basic series of 3 DTPs, 3 OPVs, 1 measles, and 1 rubella vaccine, sample survey estimates of North Carolina completion rates were 38% in 1972, 67% in 1974, 82% in 1977, 73% in 1979, and 81% in 1980. An assessment undertaken in 1987 included mumps, and the 3-3-1-1-1 series completion rate was 77.4 percent.

Due to the lack of serial data for recent years and to uncertainty about the impact of increased vaccine prices and parental fears of the DTP vaccine, projections cannot be made. However, these comparisons of N.C. and U.S. vaccination rates are favorable for North Carolina:

	Percent Completion Among Two-Year Olds		
	North Carolina		United States
	1980	1987	1984
3 DTPs	91	90	86
3 OPVs	84	86	74
Measles	90	88	82
Rubella	90	87	78
Mumps	89	87	77

### Data Sources

North Carolina: Communicable Disease Control Branch  
N.C. Division of Health Services

United States: *The 1990 Health Objectives for the Nation: A Midcourse Review* (3)

## SEXUALLY TRANSMITTED DISEASES

## REPORTED INCIDENCE OF GONORRHEA

### Objective

By 1990, reported gonorrhea incidence should be reduced to a rate of 280 cases per 100,000 population.

### Explanatory Notes

Includes all sites.

### Findings

The North Carolina gonorrhea case rate has been consistently and substantially higher than the nation's, being 75 percent higher in 1985. Following a high rate in 1982, however, the state rate has declined, and based on that trend, is projected to decline over the next four years. The target rate of 280 will not be met, however. Meanwhile, the U.S. is expected to meet the objective (3). It is possible that reporting completeness could account for some of the difference between state and national rates.

### Data Sources

North Carolina: State Center for Health Statistics

United States: Centers for Disease Control

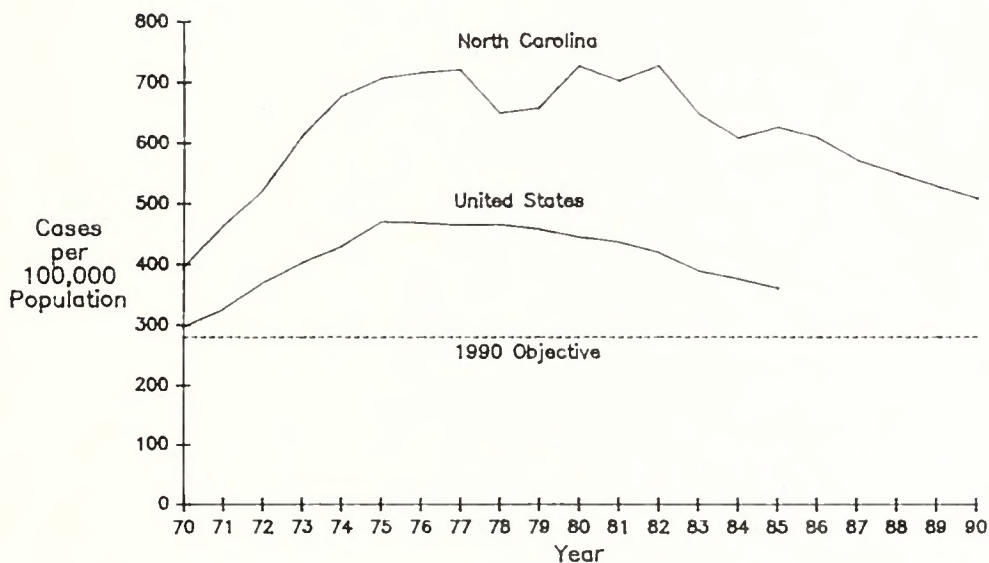


# **GONORRHEA CASE RATES NORTH CAROLINA AND UNITED STATES 1970-1986**

Year	North Carolina	United States
1970	394.5	295.3
1971	463.2	325.0
1972	520.6	368.4
1973	609.4	401.5
1974	676.7	428.6
1975	706.8	469.4
1976	716.5	466.8
1977	721.5	463.1
1978	648.6	464.4
1979	658.1	456.1
1980	727.4	443.2
1981	701.7	435.2
1982	728.3	417.9
1983	648.5	387.6
1984	607.5	374.8
1985	626.2	358.7*
1986	608.1	NA

\*Provisional data.

## **GONORRHEA CASE RATES NORTH CAROLINA AND UNITED STATES 1970-1986, NORTH CAROLINA PROJECTED TO 1990**



## REPORTED INCIDENCE OF SYPHILIS

### Objective

By 1990, reported primary and secondary syphilis incidence should be reduced to a rate of seven cases per 100,000 population per year, with a reduction in congenital syphilis to 1.5 cases per 100,000 children under one year of age.

### Findings

The North Carolina syphilis rate has fluctuated widely from a high of 23.7 in 1976 to a low 8.1 in 1979. Recent declines both nationally and in North Carolina may involve behavior changes in homosexual males to prevent AIDS. Based on these declines, the state rate is projected to decline to about 6.4 in 1990, below the target rate of 7.0. The U.S. may also meet this part of the objective. (3)

In North Carolina, the congenital syphilis rate has declined from 30.5 in 1970 to zero in 1986. Based on 1982 to 1986 trends, the 1990 target rate of 1.5 will be met. In contrast, the U.S. congenital syphilis rate increased in the early eighties to 6.5 in 1984; this is believed to be due to surveillance and reporting artifacts (3).

### Data Sources

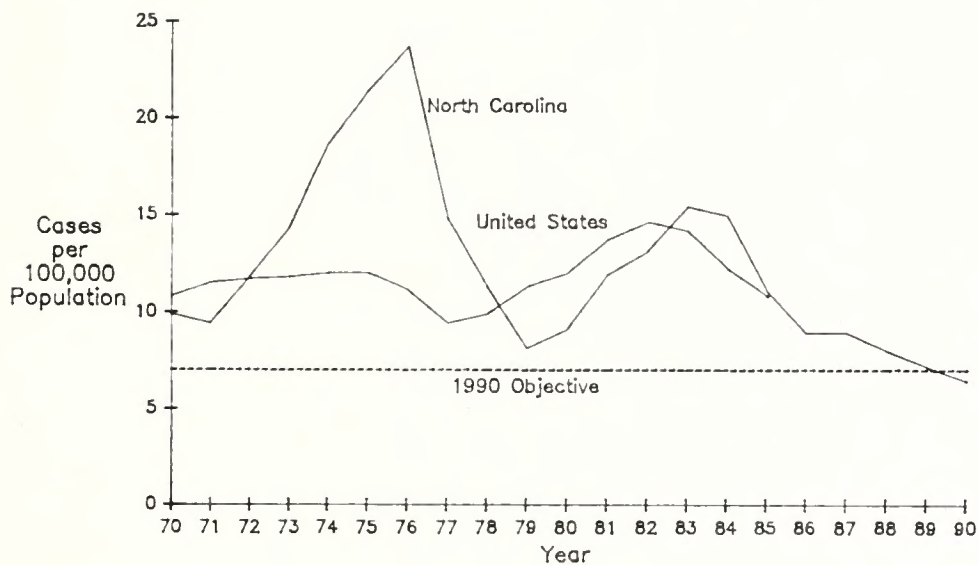
North Carolina: State Center for Health Statistics  
United States: Centers for Disease Control

**PRIMARY/SECONDARY SYPHILIS CASE RATES  
NORTH CAROLINA AND UNITED STATES  
1970-1986**

Year	North Carolina	United States
1970	9.9	10.8
1971	9.4	11.5
1972	11.8	11.7
1973	14.3	11.8
1974	18.6	12.0
1975	21.4	12.0
1976	23.7	11.1
1977	14.8	9.4
1978	11.3	9.9
1979	8.1	11.3
1980	9.1	12.0
1981	11.9	13.7
1982	13.1	14.6
1983	15.4	14.1
1984	14.9	12.2
1985	11.1	10.8*
1986	8.9	NA

\*Provisional data.

PRIMARY/SECONDARY SYPHILIS CASE RATES  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990







## **II. HEALTH PROTECTION**

### **ACCIDENT PREVENTION AND INJURY CONTROL**

## **MOTOR VEHICLE DEATH RATE**

### **Objective**

By 1990, the motor vehicle fatality rate should be reduced to no greater than 18 per 100,000 population.

### **Explanatory Notes**

Includes ICD Codes E810-825 of the Ninth Revision and E810-823 of the Eighth Revision.

### **Findings**

The state's motor vehicle fatality rate has consistently run above the nation's, and based on 1982-1986 trends, is projected to increase to about 31.7 in 1990. Nationally, the objective is expected to be met, based on progress in the early eighties (3).

### **Data Sources**

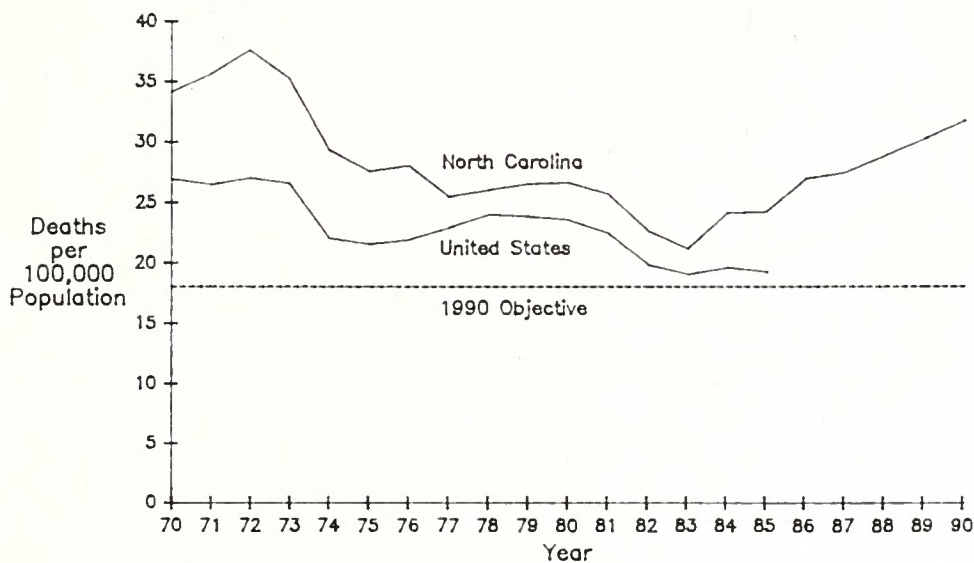
North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics



# **MOTOR VEHICLE DEATH RATES NORTH CAROLINA AND UNITED STATES 1970-1986**

Year	North Carolina	United States
1970	34.1	26.9
1971	35.6	26.4
1972	37.6	27.0
1973	35.2	26.5
1974	29.3	22.0
1975	27.5	21.5
1976	28.0	21.9
1977	25.4	22.9
1978	26.0	24.0
1979	26.5	23.8
1980	26.6	23.5
1981	25.6	22.4
1982	22.6	19.8
1983	21.1	19.0
1984	24.1	19.6
1985	24.2	19.2
1986	26.9	NA

MOTOR VEHICLE DEATH RATES  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990



## **MOTOR VEHICLE DEATH RATE FOR CHILDREN UNDER AGE 15**

### **Objective**

By 1990, the motor vehicle fatality rate for children under 15 should be reduced to no greater than 5.5 per 100,000 children.

### **Explanatory Notes**

Includes ICD Codes E810-825 of the Ninth Revision and E810-823 of the Eighth Revision.

### **Findings**

The North Carolina rate has consistently exceeded the nation's, and based on 1982-1986 trends, is projected to increase to about 11.2 in 1990. Nationally, the objective is expected to be met (3).

### **Data Sources**

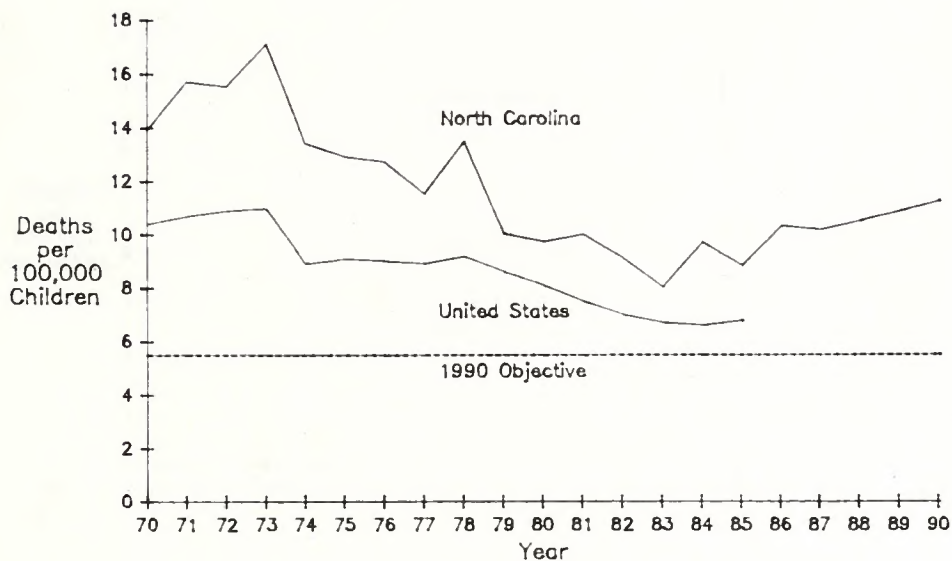
North Carolina: State Center for Health Statistics

United States: National Center for Health Statistics

**MOTOR VEHICLE DEATH RATES  
FOR CHILDREN UNDER AGE 15  
NORTH CAROLINA AND UNITED STATES  
1970-1986**

Year	North Carolina	United States
1970	13.9	10.4
1971	15.7	10.7
1972	15.5	10.9
1973	17.1	11.0
1974	13.4	8.9
1975	12.9	9.1
1976	12.7	9.0
1977	11.5	8.9
1978	13.5	9.2
1979	10.0	8.6
1980	9.7	8.1
1981	10.0	7.5
1982	9.1	7.0
1983	8.0	6.7
1984	9.7	6.6
1985	8.8	6.8
1986	10.3	NA

MOTOR VEHICLE DEATH RATES  
FOR CHILDREN UNDER AGE 15  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990





## DEATH RATE FOR ACCIDENTAL FALLS

### Objective

By 1990, the death rate from falls should be reduced to no more than two per 100,000 population.

### Explanatory Notes

Includes ICD codes E880-888 of the Ninth Revision and E880-887 of the Eighth Revision.

### Findings

The state's rate was lower than the U.S. rate during the entire period 1970-1984, probably due to North Carolina's younger population. Despite decreases of the past, the state rate has changed little since 1981 and is projected to decrease only slightly to about 4.1 in 1990. It also appears unlikely that this objective will be met nationally (3).

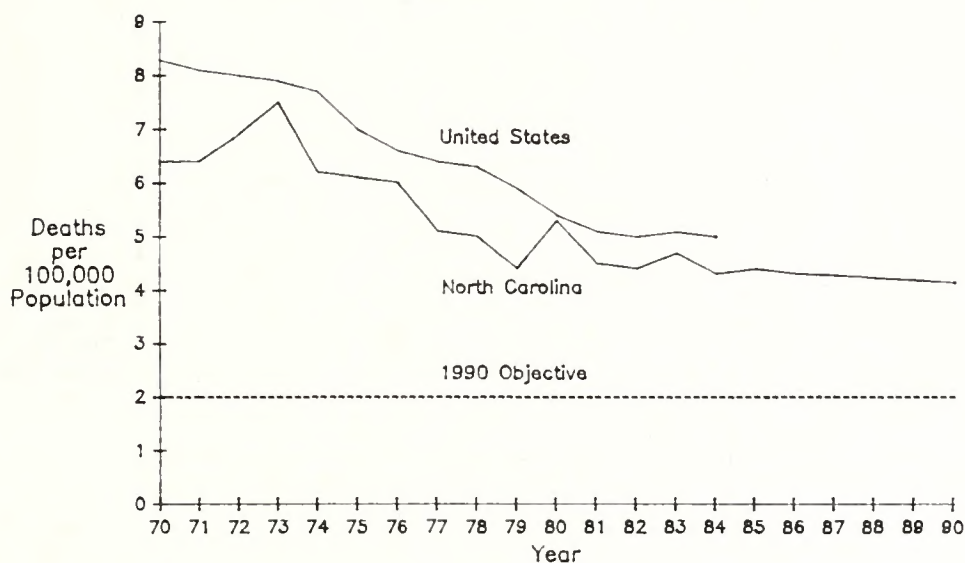
### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics

# **DEATH RATES FOR ACCIDENTAL FALLS NORTH CAROLINA AND UNITED STATES 1970-1986**

Year	North Carolina	United States
1970	6.4	8.3
1971	6.4	8.1
1972	6.9	8.0
1973	7.5	7.9
1974	6.2	7.7
1975	6.1	7.0
1976	6.0	6.6
1977	5.1	6.4
1978	5.0	6.3
1979	4.4	5.9
1980	5.3	5.4
1981	4.5	5.1
1982	4.4	5.0
1983	4.7	5.1
1984	4.3	5.0
1985	4.4	NA
1986	4.3	NA

DEATH RATES FOR ACCIDENTAL FALLS  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990



## DEATH RATE FOR DROWNING

### Objective

By 1990 the death rate from drowning should be reduced to no more than 1.5 per 100,000 persons.

### Explanatory Notes

Includes ICD codes E830, 832 and 910 of both the Eighth and Ninth revisions.

### Findings

The North Carolina drowning rate has consistently exceeded the nation's and is not expected to reach the target rate of 1.5. The higher North Carolina rate is probably related to above-average exposure due to the availability of bodies of water in this state. Nationally, the achievement of this objective appears questionable (3).

### Data Sources

North Carolina: State Center for Health Statistics

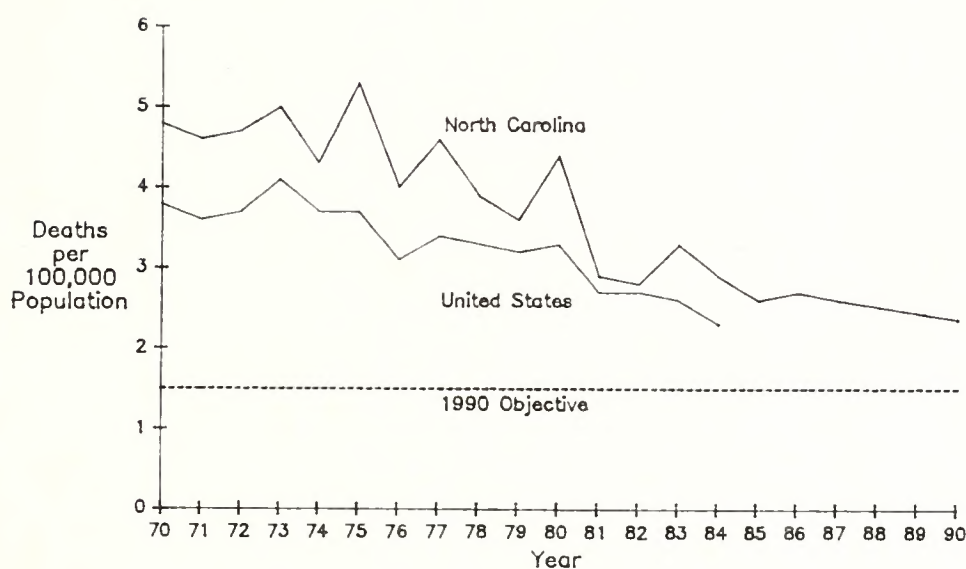
United States: National Center for Health Statistics



# **DEATH RATES FOR DROWNING NORTH CAROLINA AND UNITED STATES 1970-1986**

Year	North Carolina	United States
1970	4.8	3.8
1971	4.6	3.6
1972	4.7	3.7
1973	5.0	4.1
1974	4.3	3.7
1975	5.3	3.7
1976	4.0	3.1
1977	4.6	3.4
1978	3.9	3.3
1979	3.6	3.2
1980	4.4	3.3
1981	2.9	2.7
1982	2.8	2.7
1983	3.3	2.6
1984	2.9	2.3
1985	2.6	NA
1986	2.7	NA

DEATH RATES FOR DROWNING  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990







# **SURVEILLANCE AND CONTROL OF INFECTIOUS DISEASE**

The North Atlantic Treaty Organization (NATO) has a long history of cooperation in the field of infectious disease surveillance and control. This cooperation is based on the recognition that infectious diseases are a global threat and that the only way to effectively control them is through international collaboration. NATO has established a number of mechanisms for this cooperation, including the NATO Committee on Infectious Diseases (NCID) and the NATO Centre for Infectious Disease Research and Surveillance (NCIDRS). The NCIDRS is a key element of NATO's infectious disease surveillance and control efforts. It is a multi-disciplinary centre that brings together experts from different countries to study the spread of infectious diseases and to develop strategies for their control. The NCIDRS has been instrumental in the identification and control of several major infectious diseases, including HIV/AIDS, Ebola, and SARS. In addition, the NCIDRS has played a key role in the development of international standards for the surveillance and control of infectious diseases. This has helped to ensure that all countries are using the same methods and criteria, which makes it easier to compare data and to identify trends. The NCIDRS also provides a platform for the exchange of information and for the coordination of research efforts. This has been particularly important in the case of emerging infectious diseases, where rapid response is essential. The NCIDRS has been successful in its efforts to date, and it is expected to continue to play a key role in the future. It will continue to work closely with other international organizations, such as the World Health Organization (WHO), to ensure that the world is protected from the threat of infectious diseases.

Page 2

North Atlantic Treaty Organization  
NATO Centre for Infectious Disease Research and Surveillance

## REPORTED INCIDENCE OF TUBERCULOSIS

### Objective

By 1990, the annual reported incidence of tuberculosis should be reduced to eight per 100,000 population.

### Explanatory Notes

Due to a change in reporting criteria, data prior to 1975 are not shown.

### Findings

The North Carolina rate dropped 43 percent between 1980 and 1985 only to rise again in 1986. Although the increase may reflect only random fluctuation, epidemiologists suspect that HTLV-III/LAV infection (AIDS) may be responsible for increased tuberculosis morbidity in some areas that have large numbers of AIDS cases. Theoretically, there is reason to believe that compromised immunity secondary to AIDS may favor activation of preexisting tuberculosis infection. (3)

Even if the AIDS theory is not relevant, projections indicate that North Carolina likely will not achieve the 1990 target rate of 8.0. Nationally, the objective could be met, depending on the tuberculosis-AIDS association (3).

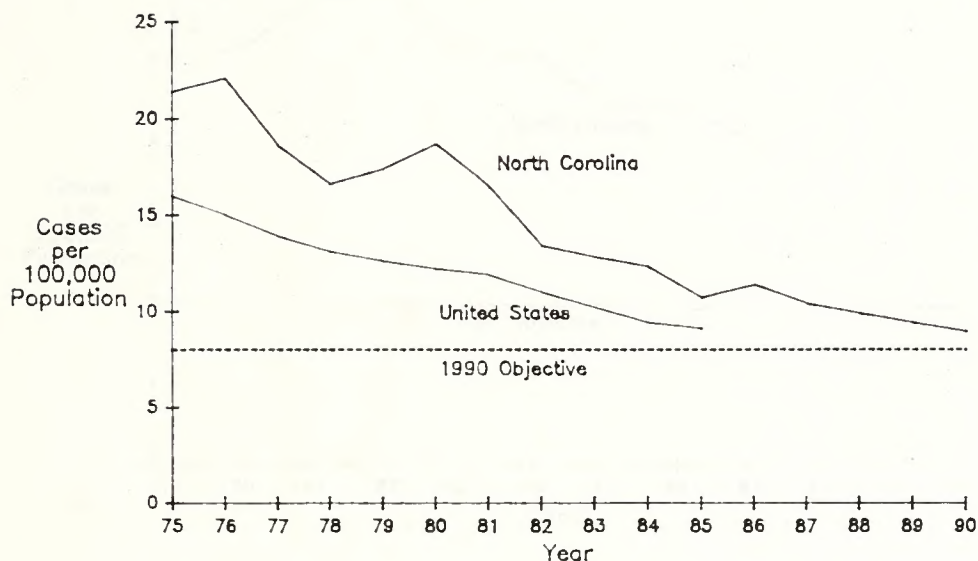
### Data Sources

North Carolina: State Center for Health Statistics  
United States: Centers for Disease Control

# **TUBERCULOSIS CASE RATES** **NORTH CAROLINA AND UNITED STATES** **1975-1986**

Year	North Carolina	United States
1975	21.4	16.0
1976	22.1	15.0
1977	18.6	13.9
1978	16.6	13.1
1979	17.4	12.6
1980	18.7	12.2
1981	16.5	11.9
1982	13.4	11.0
1983	12.8	10.2
1984	12.3	9.4
1985	10.7	9.1
1986	11.4	NA

TUBERCULOSIS CASE RATES  
 NORTH CAROLINA AND UNITED STATES  
 1975-1986, NORTH CAROLINA PROJECTED TO 1990





## REPORTED INCIDENCE OF BACTERIAL MENINGITIS

### Objective

By 1990, the annual reported incidence of bacterial meningitis should be reduced to two per 100,000 population.

### Explanatory Notes

Due to a change in reporting criteria, data prior to 1979 are not shown. Current U.S. data are not available.

### Findings

The North Carolina rate rose to 6.0 in 1982, declined to 4.5 in the last two years, and is projected to drop to about 3.3 in 1990. Nationally, it is reported that "Progress toward meeting this objective will require attainment of vaccine efficacy and availability as well as improved reporting of cases to facilitate analysis of progress." If successful, a vaccine field trial underway in Alaska may yield a licensed vaccine in 1988. (3)

### Data Source

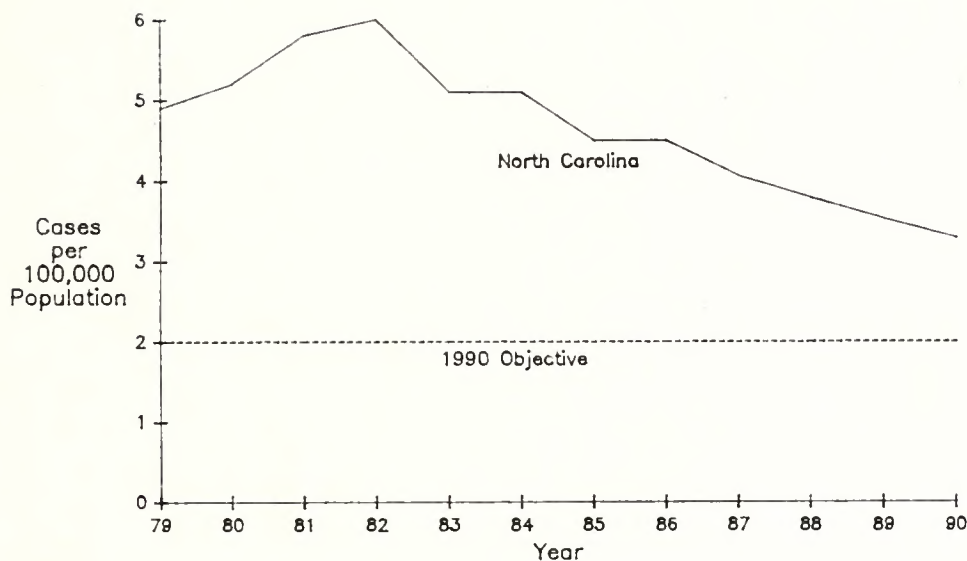
State Center for Health Statistics



**BACTERIAL MENINGITIS CASE RATES  
NORTH CAROLINA  
1979-1986**

Year	Rate
1979	4.9
1980	5.2
1981	5.8
1982	6.0
1983	5.1
1984	5.1
1985	4.5
1986	4.5

BACTERIAL MENINGITIS CASE RATES  
NORTH CAROLINA, 1979-1986, PROJECTED TO 1990





### III. HEALTH PROMOTION MISUSE OF ALCOHOL AND DRUGS



## **DEATH RATE FOR ALCOHOL-RELATED ACCIDENTS EXCEPT MOTOR VEHICLE**

### **Objective**

By 1990, deaths from other (nonmotor-vehicle) accidents indirectly attributable to alcohol use should be reduced to five per 100,000 population per year.

### **Explanatory Notes**

State data prior to 1980 are not available. U.S. data related to alcohol and accidents other than motor vehicle are derived from many sources, and trend data are not available.

### **Findings**

The North Carolina death rate for these accidents has dropped 31 percent since 1980 and is projected to reach about 4.8 in 1990, just below the target rate of 5.0. The U.S. is reported to have achieved the objective by 1983 when there were 4.3 of these fatalities per 100,000 population (3).

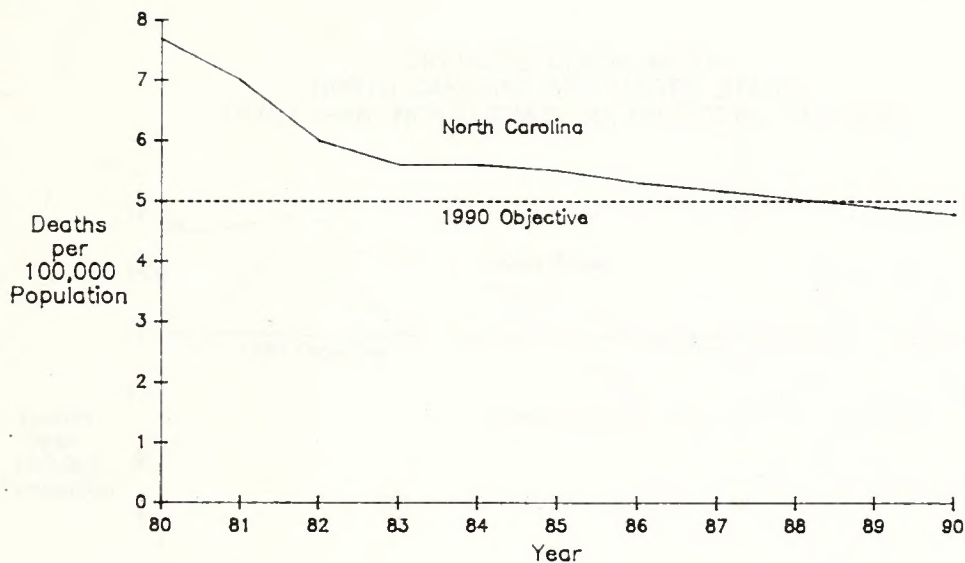
### **Data Source**

Office of the Chief Medical Examiner  
N.C. Division of Health Services

# DEATH RATES FOR ALCOHOL-RELATED ACCIDENTS EXCEPT MOTOR VEHICLE NORTH CAROLINA 1980-1986

Year	Rate
1980	7.7
1981	7.0
1982	6.0
1983	5.6
1984	5.6
1985	5.5
1986	5.3

## DEATH RATES FOR ALCOHOL-RELATED ACCIDENTS EXCEPT MOTOR VEHICLE NORTH CAROLINA, 1980-1986, PROJECTED TO 1990



## CIRRHOSIS DEATH RATE

### Objective

By 1990, the cirrhosis mortality rate should be reduced to 12 per 100,000 per year.

### Explanatory Notes

Includes ICD code 571 of both the Eighth and Ninth revisions.

### Findings

The state's cirrhosis mortality rate has consistently been below the nation's and has remained below 12.0 since 1981. The rate is projected to continue to decline to about 9.4 in 1990. The U.S. rate has remained below 12.0 since 1982. These trends accompany a reduction in per capita consumption of alcohol; many experts estimate that alcohol abuse is associated with 90-95 percent of cirrhosis deaths (3).

### Data Sources

North Carolina: State Center for Health Statistics

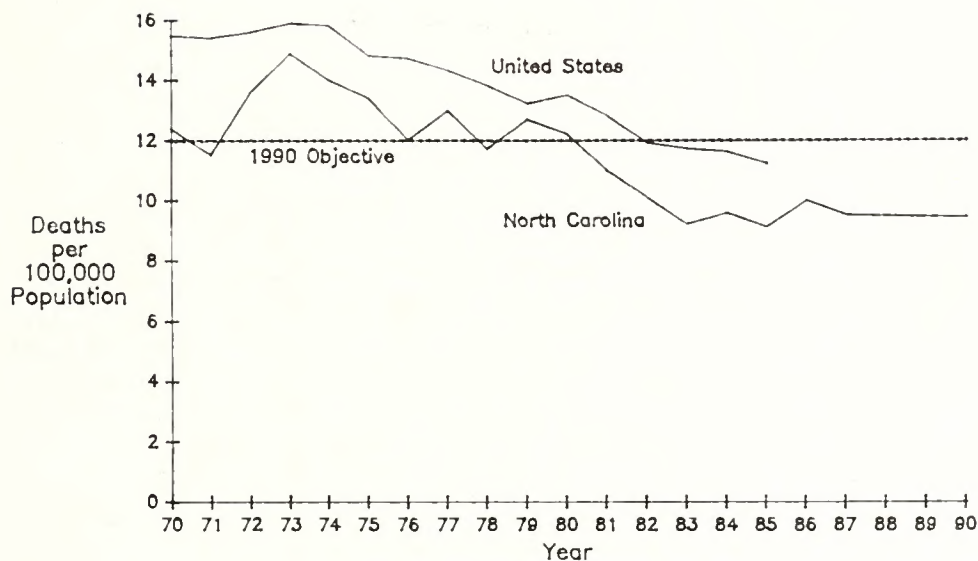
United States: National Center for Health Statistics



# **CIRRHOSIS DEATH RATES** **NORTH CAROLINA AND UNITED STATES** **1970-1986**

Year	North Carolina	United States
1970	12.4	15.5
1971	11.5	15.4
1972	13.6	15.6
1973	14.9	15.9
1974	14.0	15.8
1975	13.4	14.8
1976	12.0	14.7
1977	13.0	14.3
1978	11.7	13.8
1979	12.7	13.2
1980	12.2	13.5
1981	11.0	12.8
1982	10.1	11.9
1983	9.2	11.7
1984	9.6	11.6
1985	9.1	11.2
1986	10.0	NA

## CIRRHOSIS DEATH RATES NORTH CAROLINA AND UNITED STATES 1970-1986, NORTH CAROLINA PROJECTED TO 1990





## DRUG-RELATED DEATH RATE

### Objective

By 1990, drug-related mortality should be reduced to 2 per 100,000 per year.

### Explanatory Notes

Excludes deaths caused by alcohol. Includes ICD codes E850-858, E950.0-950.5, E980.0-980.5 of the Ninth Revision and E850-859, E950.0-950.3, and 980.0-980.3 of the Eighth Revision.

### Findings

The North Carolina data indicate a gradual increase in nonalcohol drug-related mortality with a 1990 projection of about 2.7 deaths per 100,000 population. The U.S. rate also increased in 1984 following four years of stable rates.

Based on toxicology tests performed on approximately 85 percent of N.C. Medical Examiner cases in 1986 (6), the largest numbers of these deaths involved antidepressants (46 deaths), abused drugs (44 deaths), and propoxyphene (18 deaths). A striking trend is the recent rise in cocaine-related deaths, from 3 in 1981 to 27 in 1986.

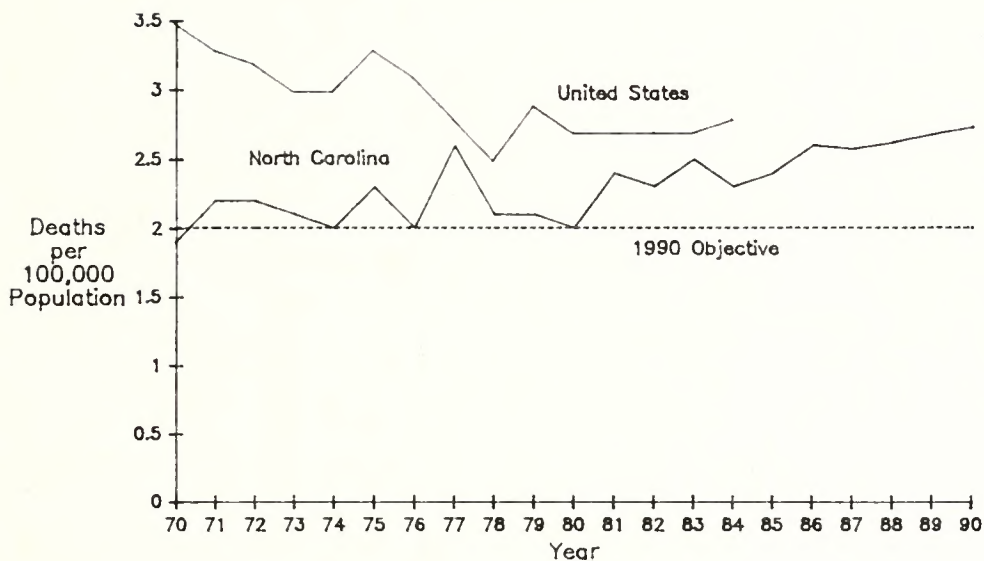
### Data Sources

North Carolina: State Center for Health Statistics  
United States: National Center for Health Statistics

# **DRUG-RELATED DEATH RATES** **NORTH CAROLINA AND UNITED STATES** **1970-1986**

Year	North Carolina	United States
1970	1.9	3.5
1971	2.2	3.3
1972	2.2	3.2
1973	2.1	3.0
1974	2.0	3.0
1975	2.3	3.3
1976	2.0	3.1
1977	2.6	2.8
1978	2.1	2.5
1979	2.1	2.9
1980	2.0	2.7
1981	2.4	2.7
1982	2.3	2.7
1983	2.5	2.7
1984	2.3	2.8
1985	2.4	NA
1986	2.6	NA

DRUG-RELATED DEATH RATES  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990





RESEARCH REPORT  
NORTH CAROLINA AND UNITED STATES  
1975-1976

Document

By 1975, the state was a significant factor in the development of the state's economy and society.

## CONTROL OF STRESS AND VIOLENT BEHAVIOR

Document

Control of stress and violent behavior is a significant factor in the development of the state's economy and society.

1975-1976  
1975-1976  
1975-1976  
1975-1976

Document

The state's economy and society are significantly affected by the development of the state's economy and society. The state's economy and society are significantly affected by the development of the state's economy and society.

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North Carolina and United States  
1975-1976

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1975-1976





## **HOMICIDE RATE FOR BLACK MALES AGES 15-24**

### **Objective**

By 1990, the death rate from homicide among Black males ages 15-24 should be reduced to below 60 per 100,000.

### **Explanatory Notes**

Includes ICD codes E960-978 of the Ninth Revision. N.C. data for Blacks were not tabulated prior to 1979.

### **Findings**

The North Carolina rate dropped to 19.9 in 1983 but has risen each year since and is projected to rise to about 43.0 in 1990. Though these rates are well below the national target of 60, the rising trend is a concern. Nationally, it appears possible that this objective will be met (3).

### **Data Sources**

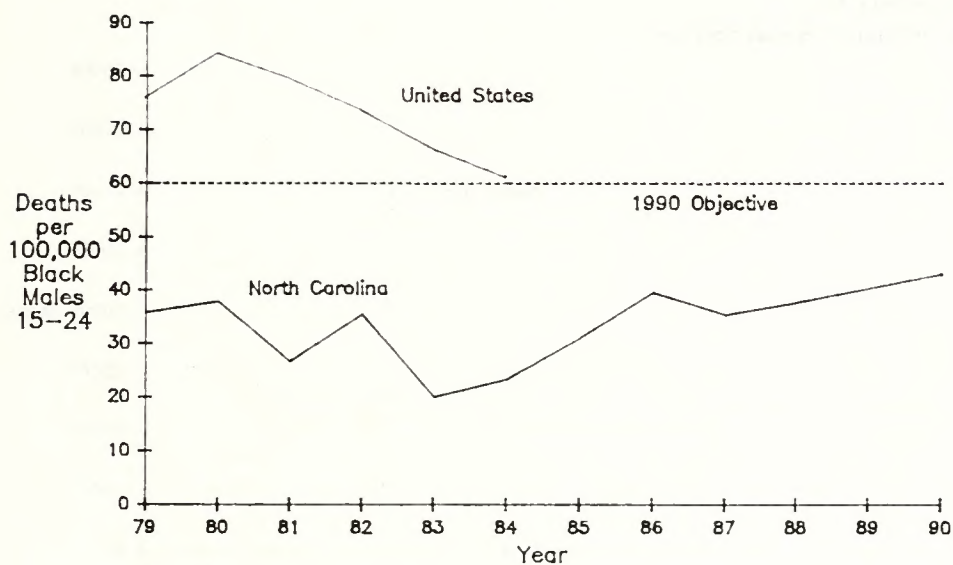
North Carolina: State Center for Health Statistics

United States: National Center for Health Statistics

# **HOMICIDE RATES FOR BLACK MALES 15-24 NORTH CAROLINA AND UNITED STATES 1979-1986**

Year	North Carolina	United States
1979	35.8	76.4
1980	37.9	84.8
1981	26.5	80.0
1982	35.5	74.1
1983	19.9	66.8
1984	23.3	61.5
1985	31.0	NA
1986	39.6	NA

## **HOMICIDE RATES FOR BLACK MALES 15-24 NORTH CAROLINA AND UNITED STATES 1979-1986, NORTH CAROLINA PROJECTED TO 1990**



## REPORTED INCIDENCE OF CHILD ABUSE

### Objective

By 1990, injuries and deaths to children inflicted by abusing parents should be reduced by at least 25 percent.

### Explanatory Notes

Cases are the number of abused and neglected children (ages 0-17) reported to the North Carolina Central Registry. A case is confirmed or not following investigation by the resident county's Department of Social Services. North Carolina's mandatory child abuse reporting law was passed in 1971, but data prior to FY1977 may not be comparable to that reported after. Reported deaths due to child abuse are considered to be unreliable counts of the actual incidence. Reported cases also do not reflect actual incidence; a national study conducted in 1980 found that only one case of child maltreatment in every three had been reported to a child protective agency (3).

### Findings

In eight of the ten years from 1977 to 1987, the number of cases reported to the North Carolina Central Registry rose, for an overall increase of 125 percent. However, improved surveillance and reporting practices may account for some of the increase. Reliable national data are not available, but estimates indicate an increase of 158 percent in reported cases in the eight years from 1976 to 1984 (3).

In North Carolina, 40-43 percent of reported cases were confirmed in each fiscal year 1977 to 1984. That percentage then dropped, to 38% in 1985, 36% in 1986, and 35% in 1987. Reasons for these declines are unknown, but if recent trends continue, only 31% of reported cases will be confirmed in FY1990.

### Data Source

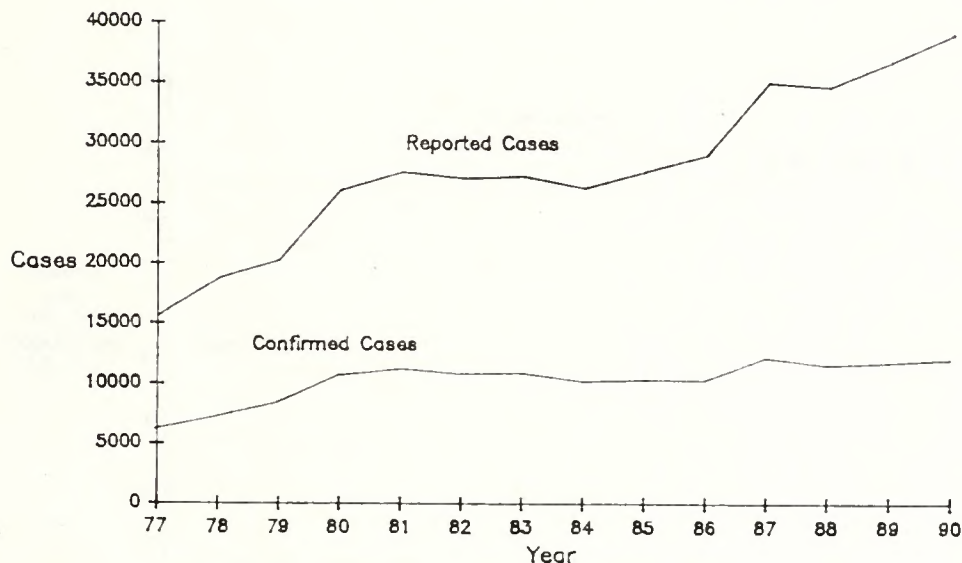
Child Protective Service Unit  
North Carolina Division of Social Services



# **NUMBER OF REPORTED CASES OF CHILD ABUSE AND NEGLECT NORTH CAROLINA FY1977-1987**

Fiscal Year	Reported Cases	Confirmed Cases
1977	15,511	6,354
1978	18,686	7,438
1979	20,204	8,623
1980	25,994	10,891
1981	27,518	11,421
1982	26,981	10,961
1983	27,217	11,103
1984	26,201	10,372
1985	27,625	10,554
1986	28,992	10,445
1987	34,959	12,379

NUMBER OF REPORTED CASES OF CHILD  
ABUSE AND NEGLECT, NORTH CAROLINA  
FISCAL YEARS 1977-1987, PROJECTED TO 1990





## SUICIDE RATE FOR PERSONS 15-24 YEARS OF AGE

### Objective

By 1990, the rate of suicide among people 15 to 24 should be below 11 per 100,000.

### Explanatory Notes

Includes ICD codes E950-959 of both the Eighth and Ninth revisions.

### Findings

The state's suicide rate for persons 15 to 24 dropped in 1986 to below the target rate of 11 but was still nearly double the rate observed in 1970. A decrease to about 9.2 is projected for 1990. Nationally, it was expected (based on 1978-1983 trends) that this objective may be met (3); however, the rate increased in 1984 and 1985.

### Data Sources

North Carolina: State Center for Health Statistics

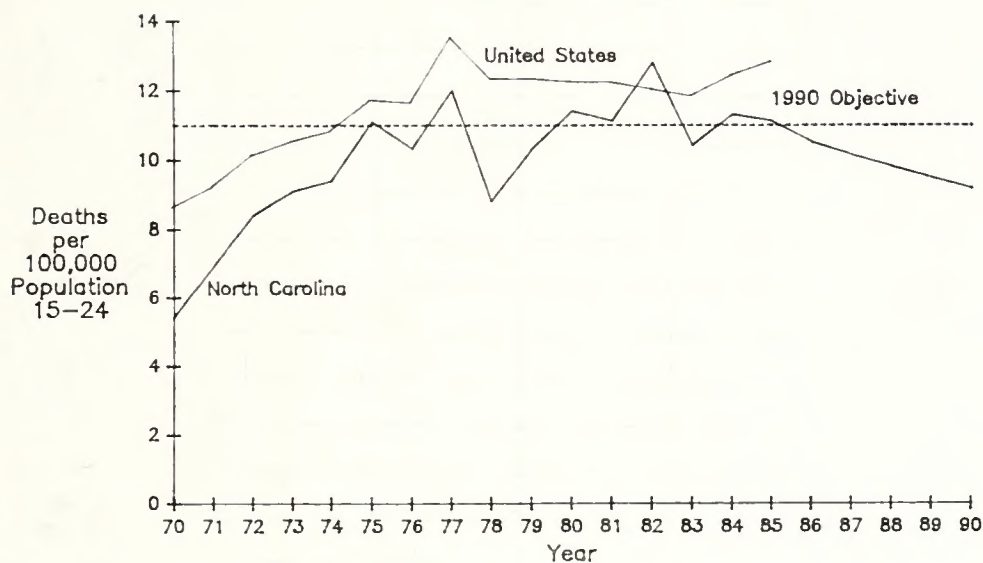
United States: National Center for Health Statistics



**SUICIDE RATES FOR AGES 15-24  
NORTH CAROLINA AND UNITED STATES  
1970-1986**

Year	North Carolina	United States
1970	5.4	8.7
1971	6.9	9.3
1972	8.4	10.2
1973	9.1	10.6
1974	9.4	10.9
1975	11.1	11.8
1976	10.3	11.7
1977	12.0	13.6
1978	8.8	12.4
1979	10.3	12.4
1980	11.4	12.3
1981	11.1	12.3
1982	12.8	12.1
1983	10.4	11.9
1984	11.3	12.5
1985	11.1	12.9
1986	10.5	NA

SUICIDE RATES FOR AGES 15-24  
NORTH CAROLINA AND UNITED STATES  
1970-1986, NORTH CAROLINA PROJECTED TO 1990





3 3091 00747 9520

# NORTH CAROLINA AND UNITED STATES

1970-1989

Table with 3 columns: Year, North Carolina, United States

Year	North Carolina	United States
1970	10.1	10.1
1971	10.2	10.2
1972	10.3	10.3
1973	10.4	10.4
1974	10.5	10.5
1975	10.6	10.6
1976	10.7	10.7
1977	10.8	10.8
1978	10.9	10.9
1979	11.0	11.0
1980	11.1	11.1
1981	11.2	11.2
1982	11.3	11.3
1983	11.4	11.4
1984	11.5	11.5
1985	11.6	11.6
1986	11.7	11.7
1987	11.8	11.8
1988	11.9	11.9
1989	12.0	12.0

## 1970-1989 NORTH CAROLINA AND UNITED STATES SMOKE RATES FOR ALL 15-24



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- (1) U.S. Department of Health and Human Services, Public Health Service. *Healthy People, The Surgeon General's Report on Health Promotion and Disease Prevention*. Washington, D.C., 1979.
- (2) U.S. Department of Health and Human Services, Public Health Service. *Promoting Health/Preventing Disease: Objectives for the Nation*. U.S. Government Printing Office, Washington, D.C., Fall 1980.
- (3) U.S. Department of Health and Human Services, Public Health Service. *The 1990 Health Objectives for the Nation: A Midcourse Review*. Washington D.C., November 1986.
- (4) U.S. Department of Health, Education and Welfare, Public Health Service, National Center for Health Statistics. *Eighth Revision International Classification of Diseases, Adapted for Use in the United States*. Public Health Service Publication Number 1693. U.S. Government Printing Office, Washington, D.C., December 1968.
- (5) World Health Organization. *International Classification of Diseases (Ninth Revision)*. Geneva 1977.
- (6) North Carolina Department of Human Resources, Division of Health Services, Office of the Chief Medical Examiner. *Annual Report 1986*. Chapel Hill, N.C., 1987.

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Division of Health Services  
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